

# **ENDANGERED SPECIES—Part 2**

---

## **HEARINGS BEFORE THE SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION AND THE ENVIRONMENT OF THE COMMITTEE ON MERCHANT MARINE AND FISHERIES HOUSE OF REPRESENTATIVES**

**NINETY-FIFTH CONGRESS**

**SECOND SESSION**

**ON**

**Endangered Species Authorization—H.R. 10883**

**A BILL TO AUTHORIZE APPROPRIATIONS TO CARRY OUT THE  
ENDANGERED SPECIES ACT OF 1973 DURING FISCAL YEARS  
1979, 1980, AND 1981**

---

**FEBRUARY 15, 1978**

---

**Endangered Species Oversight**

---

**MAY 24, 25, JUNE 1, 15, 16, 20, 23, AND 28, 1978**

---

**Serial No. 95-40**

---

**Printed for the use of the Committee on Merchant Marine and Fisheries**



**U.S. GOVERNMENT PRINTING OFFICE**

**WASHINGTON : 1978**

**32-675 O**

## COMMITTEE ON MERCHANT MARINE AND FISHERIES

JOHN M. MURPHY, *New York, Chairman*

THOMAS L. ASHLEY, Ohio  
JOHN D. DINGELL, Michigan  
PAUL G. ROGERS, Florida  
WALTER B. JONES, North Carolina  
ROBERT L. LEGGETT, California  
MARIO BIAGGI, New York  
GLENN M. ANDERSON, California  
E (KIKI) DE LA GARZA, Texas  
RALPH H. METCALFE, Illinois  
JOHN B. BREAUX, Louisiana  
FRED B. ROONEY, Pennsylvania  
BO GINN, Georgia  
GERRY E. STUDDS, Massachusetts  
DAVID R. BOWEN, Mississippi  
JOSHUA EILBERG, Pennsylvania  
RON DE LUGO, Virgin Islands  
CARROLL HUBBARD, Jr., Kentucky  
DON BONKER, Washington  
LES AU COIN, Oregon  
NORMAN E. D'AMOURS, New Hampshire  
JERRY M. PATTERSON, California  
LEO C. ZEFERETTI, New York  
JAMES L. OBERSTAR, Minnesota  
WILLIAM J. HUGHES, New Jersey  
BARBARA A. MIKULSKI, Maryland  
DAVID E. BONIOR, Michigan  
DANIEL K. AKAKA, Hawaii

PHILIP E. RUPPE, Michigan  
PAUL N. McCLOSKEY, Jr., California  
GENE SNYDER, Kentucky  
EDWIN B. FORSYTHE, New Jersey  
DAVID C. TREEN, Louisiana  
JOEL PRITCHARD, Washington  
DON YOUNG, Alaska  
ROBERT E. BAUMAN, Maryland  
NORMAN F. LENT, New York  
DAVID F. EMERY, Maine  
ROBERT K. DORNAN, California  
THOMAS B. EVANS, Jr., Delaware  
PAUL S. TRIBLE, Jr., Virginia

CARL L. PERIAN, *Chief of Staff*  
ERNEST J. CORRADO, *Chief Counsel*  
FRANCES STILL, *Chief Clerk*  
W. PATRICK MORRIS, *Chief Minority Counsel*

---

## SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION AND THE ENVIRONMENT

ROBERT L. LEGGETT, *California, Chairman*

JOHN D. DINGELL, Michigan  
FRED B. ROONEY, Pennsylvania  
BO GINN, Georgia  
DAVID R. BOWEN, Mississippi  
CARROLL HUBBARD, Jr., Kentucky  
JAMES L. OBERSTAR, Minnesota  
PAUL G. ROGERS, Florida  
MARIO BIAGGI, New York  
GLENN M. ANDERSON, California  
E (KIKI) DE LA GARZA, Texas  
JOHN B. BREAUX, Louisiana  
GERRY E. STUDDS, Massachusetts  
DON BONKER, Washington  
LES AU COIN, Oregon  
WILLIAM J. HUGHES, New Jersey  
DAVID E. BONIOR, Michigan  
DANIEL K. AKAKA, Hawaii  
JOHN M. MURPHY, New York (ex officio)

EDWIN B. FORSYTHE, New Jersey  
PAUL N. McCLOSKEY, Jr., California  
DON YOUNG, Alaska  
ROBERT E. BAUMAN, Maryland  
DAVID F. EMERY, Maine  
ROBERT K. DORNAN, California  
THOMAS B. EVANS, Jr., Delaware  
PAUL S. TRIBLE, Jr., Virginia  
PHILIP E. RUPPE, Michigan (ex officio)

NED P. EVERETT, *Counsel*  
ROBERT D. THORNTON, *Counsel*  
GEORGE J. MANNINA, Jr., *Minority Professional Staff*

# CONTENTS\*

## ENDANGERED SPECIES AUTHORIZATION

|   | Page |
|---|------|
| Hearing held—February 15, 1978 .....  | 1    |
| Text of—H.R. 10883 .....  | 3    |
| Statement of—   |      |
| Garrett, Tom, Defenders of Wildlife .....   | 27   |
| Gehring, Jack, Deputy Director, National Marine Fisheries Service,<br>Department of Commerce .....                                  | 22   |
| Gorrell, Robert, Endangered Species Program, NMFS, Department of<br>Commerce .....  | 22   |
| Graham, Ann, assistant Washington representative, National Audubon<br>Society .....   | 45   |
| Greenwalt, Lynn A., Director, U.S. Fish and Wildlife Service, Department<br>of the Interior .....                                   | 4    |
| Drewry, James, Office of General Counsel, NOAA, Department of Com-<br>merce .....   | 22   |
| Kaplan, Elizabeth, assistant legislative director, Friends of the Earth .....   | 29   |
| Michieli, Ronald A., for the National Cattlemen's Association; Public<br>Lands Council; and National Wool Growers Association ..... | 48   |
| Schreiner, Keith, Associate Director, Federal Assistance, Department of<br>the Interior .....                                       | 4    |
| Smith, James V., vice president, The Waterways Journal .....  | 47   |
| Stevens, Mrs. Christine, secretary, Society for Animal Protective Legisla-<br>tion .....  | 32   |
| Additional material supplied—   |      |
| Cahill, Jim: The Shame of Escobilla .....   | 33   |
| Interior Department: Five-year listing plan, fiscal years 1978-83 .....   | 13   |

## ENDANGERED SPECIES OVERSIGHT

|   |     |
|---|-----|
| Hearings held—  |     |
| May 24, 1978 .....  | 51  |
| May 25, 1978 .....  | 177 |
| June 1, 1978 .....  | 249 |
| June 15, 1978 .....   | 425 |
| June 16, 1978 .....   | 515 |
| June 20, 1978 .....   | 563 |
| June 23, 1978 .....   | 717 |
| June 28, 1978 .....   | 849 |
| Statement of—   |     |
| Barschdorf, Milton, chairman of the board, Inland Rivers Ports and<br>Terminals, Inc. ....          | 846 |
| Bean, Michael, Environmental Defense Fund .....   | 551 |
| Beard, Hon. Robin L., a Representative in Congress from the State of<br>Tennessee .....             | 65  |
| Berger, Michael E., assistant conservation director, National Wildlife<br>Federation .....          | 288 |
| Prepared statement .....  | 303 |
| Berghoffen, Gene, director, resource programs, National Forest Products<br>Association .....        | 723 |
| Bevill, Hon. Tom, a Representative in Congress from the State of Alabama .                          | 178 |
| Blanton, Ray, Governor of the State of Tennessee .....  | 187 |
| Boland, Kevin, Assistant Director, Energy and Minerals Division, General<br>Accounting Office ..... | 231 |

\*Pages 1-562 may be found in Part 1, Serial No. 95-39; pages 563-1225 may be found in Part 2, Serial No. 95-40.

## Statement of—Continued

|   | Page     |
|---|----------|
| Bond, Dr. Billy, Assistant Director, TVA Division of Agricultural Development.....  | 728      |
| Bond, Frank, Peregrine Fund, State of New Mexico .....  | 834      |
| Brown, J. D., deputy executive director, American Public Power Association .....  | 799      |
| Buchanan, Hon. John, a Representative in Congress from the State of Alabama .....   | 178, 192 |
| Burgner, Daniel, Greenville, Tenn .....   | 652      |
| Bushman, John B., zoologist, Office of the Chief of Engineers, Department of the Army .....   | 480      |
| Canfield, Monte, Jr., Director, Energy and Minerals Division, General Accounting Office .....   | 231      |
| Prepared statement .....  | 232      |
| Carlton, Robert, Wildlife Biologist, National Forest Products Association ....  | 723      |
| Chapman, Dr. Jefferson, University of Tennessee .....   | 666      |
| Prepared statement .....  | 673      |
| Cook Sara, Tennessee Endangered Species Committee .....   | 677      |
| Cook, Sherry, legislative assistant, Congressman Duncan .....   | 52       |
| Cox, David, Trout Unlimited .....   | 659      |
| Prepared statement .....  | 660      |
| Cutler, Dr. M. Rupert, Assistant Secretary for Conservation, Research and Education, U.S. Department of Agriculture .....                                 | 426      |
| Davis, Mrs. Beulah, Vonore, Tenn .....  | 647      |
| Dingell, Hon. John D., a Representative in Congress from the State of Michigan .....  | 106      |
| Doss, Chriss, Commissioner for Public Works, Jefferson County, Ala .....  | 199      |
| Duncan, Hon. John J., a Representative in Congress from the State of Tennessee.....   | 52       |
| Prepared statement .....  | 57       |
| Durham, James, chairman, International Indian Treaty Council .....  | 648      |
| Edwards, Stephen R., executive director, Association of Systematics Collections .....   | 814      |
| Erdheim, Eric, Office of General Counsel, NOAA, Department of Commerce .....  | 504      |
| Etnier, Dr. David A. ....   | 639      |
| Evison, Boyd, Superintendent, Great Smoky Mountains National Park .....   | 675      |
| Fischer, Roland C., Secretary-Engineer, Colorado River Water Conservation District .....  | 682      |
| Flowers, Hon. Walter, a Representative in Congress from the State of Alabama .....  | 178, 181 |
| Freeman, S. David, Chairman of the Board of Directors, Tennessee Valley Authority .....   | 728      |
| Fund for Animals .....  | 552      |
| Garrett, Tom, legislative affairs specialist, Defenders of Wildlife .....   | 288      |
| Gehringer, Jack W., Acting Deputy Assistant Administrator for Fisheries, NOAA, Department of Commerce .....   | 504      |
| Gorrell, Robert, marine mammals and endangered species program, NOAA, Department of Commerce .....  | 504      |
| Goslin, Ival V., executive director, Upper Colorado River Commission .....  | 404      |
| Graham, Lt. Col. Richard A., the United Peregrine Society, American Falconers Association .....   | 834      |
| Greenwalt, Lynn A., Director, Fish and Wildlife Service, Department of the Interior .....   | 112, 856 |
| Hanson, Donald, Dean, Tennessee School of Architecture .....  | 534      |
| Hardin, Julie, Knoxville, Tenn .....  | 674      |
| Haselton, William, president, St. Regis Paper Co., and second vice president, National Forest Products Association .....                                  | 723      |
| Herbst, Robert L., Assistant Secretary for Fish and Wildlife and Parks, Department of the Interior .....  | 112      |
| Hill, Lt. Col. John R., Jr., Assistant Director of Civil Works for Environmental Programs, Office of the Chief of Engineers, Department of the Army ..... | 480      |
| Howard, Donald, Project Manager, Energy and Minerals Division, General Accounting Office.....   | 231      |



## Statement of—Continued

|  | Page     |
|--|----------|
| Ives, Joseph S., Environmental Counsel, National Rural Electric Cooperative Association .....  | 705      |
| Prepared statement .....   | 707      |
| Jeffords, Hon. James M., a Representative in Congress from the State of Vermont .....  | 249      |
| Jones, Dale, Director, Wildlife Division, U.S. Forest Service, Department of Agriculture .....   | 426      |
| Jonez, Al R., Chief, Office of Environmental Affairs, Bureau of Reclamation, Department of the Interior .....  | 112      |
| Kepner, Kathleen, conservation chairman, Michigan Cactus & Succulent Society .....   | 188      |
| King, Laura Hill, Eastern Band of Cherokee Indians .....   | 661      |
| Prepared statement .....   | 663      |
| King, Dr. Wayne, conservation director, New York Zoological Society .....  | 807      |
| Kuci, Brig. Gen. R. A., Director of Training Division, Headquarters, U.S. Marine Corps .....   | 478      |
| Lehman, Hon. William, a Representative in Congress from the State of Florida .....   | 397      |
| Lett, Hon. Trent, a Representative in Congress from the State of Mississippi .....   | 59       |
| Prepared statement .....   | 63       |
| Lovejoy, Thomas E., Program Director, World Wildlife Fund—U.S. ....  | 1211     |
| Lyle, James: Statement submitted for Senate Oversight Hearings .....   | 1213     |
| Lyles, Charles H., executive director, Gulf States Marine Fisheries Commission .....   | 172, 256 |
| MacFarland, Lon P., on behalf of the Upper Duck River—Development Association, Agency, and Planning Commission .....   | 190      |
| Marriott, Hon. Dan, a Representative in Congress from the State of Utah .....  | 462      |
| McCarty, Robert L., special counsel, Colorado River Water Conservation District .....  | 682      |
| McCormick, Dr. Frank, Association of Southeastern Biologists .....   | 638      |
| Prepared statement .....   | 641      |
| McGrath, Joseph, Vice President for Government Affairs, National Forest Products Association .....   | 723      |
| McIlwain, Jerry, endangered species specialist .....   | 426      |
| McKay, Hon. Gunn, a Representative in Congress from the State of Utah .....  | 397      |
| Meyner, Hon. Helen, a Representative in Congress from the State of New Jersey .....  | 108      |
| Moeller, Prof. John, University of Alabama .....   | 202      |
| Oklahoma Chapter, Sierra Club .....  | 519      |
| Oklahoma Ornithological Society .....  | 519      |
| Ottinger, Hon. Richard L., a Representative in Congress from the State of New York .....   | 261      |
| Plater, Zygmunt J. B., Little Tennessee River Alliance and Friends of the Earth .....  | 288, 627 |
| Prepared statement .....   | 283, 633 |
| Poole, Dan, president, Wildlife Management Institute .....   | 544      |
| Regenstein, Lou, executive vice president, Fund for Animals .....  | 557      |
| Retan, Dr. J. Walden, Alabama Conservancy, Birmingham Audubon Society and Cahaba Group, Sierra Club .....  | 529      |
| Reuss, Hon. Henry S., a Representative in Congress from the State of Wisconsin .....   | 399      |
| Reveal, Dr. James L., Associate Professor of Botany, University of Maryland, representing the American Society of Plant Taxonomists and the Botanical Society of America ..... | 327      |
| Ripley, Dr. Thomas, Director, TVA Division of Forestry, Fisheries and Wildlife Development .....   | 728      |
| Risenhoover, Hon. Ted, a Representative in Congress from the State of Oklahoma .....   | 718      |
| Ritchey, Jean, Vonore, Tenn. ....  | 642      |
| Prepared statement .....   | 645      |

|  |          |
|--|----------|
| Statement of—Continued   | Page     |
| Robinson, John, Manager, Resources and Environmental Quality Division,<br>U.S. Chamber of Commerce .....   | 792      |
| Roche, Francis B., Director, Real Property and Natural Resources, Depart-<br>ment of Defense .....   | 478      |
| Russell, Dr. William, Oak Ridge National Laboratory .....  | 654      |
| Prepared statement .....   | 656      |
| Schreiner, Keith M., Associate Director, Federal Assistance, Fish and<br>Wildlife Service, Department of the Interior .....  | 112, 856 |
| Simonton, Fred G., executive director, Mid-West Electric Consumers Asso-<br>ciation, Inc .....   | 705      |
| Prepared statement .....   | 706      |
| Simpson, Donald, Pacific Legal Foundation .....  | 849      |
| Prepared statement .....   | 853      |
| Skelton, William, Tennessee Sierra Club .....  | 627      |
| Spengler, Daniel, Supervisory Auditor, Energy and Minerals Division,<br>General Accounting Office .....  | 231      |
| Steele, George E., Jr., on behalf of the Zoological Action Committee .....   | 501      |
| Prepared statement .....   | 496      |
| Stevens, Christine, Secretary, Society for Animal Protective Legislation ...   | 288      |
| Prepared statement .....   | 297      |
| Talbot, Lee, Assistant to the Chairman, Council on Environmental<br>Quality .....  | 490      |
| Taylor, Connie, Sierra Club, Oklahoma Chapter, Oklahoma Ornithological<br>Society .....  | 515      |
| Thompson, Hon. Frank, Jr., a Representative in Congress from the State of<br>New Jersey .....  | 177      |
| Tucker, W. Samuel, Jr., manager of environmental affairs, Florida Power<br>& Light Co .....  | 825      |
| Van Note, Craig, executive vice president, Monitor, Inc .....  | 551      |
| Prepared statement .....   | 552      |
| Wagner, Robert O., on behalf of the American Association of Zoological<br>Parks and Aquariums .....  | 501      |
| Prepared statement .....   | 498      |
| Warren, Charles, chairman, Council on Environmental Quality .....  | 490      |
| Water Resources Congress .....   | 1210     |
| Watkins, Hon. Wes, a Representative in Congress from the State of<br>Oklahoma .....  | 108      |
| Weinberg, Edward, Counsel, Basin Electric Power Co .....   | 705      |
| Whitehurst, Hon. G. William, a Representative in Congress from the State<br>of Virginia .....  | 399      |
| Wood, Lance D., Office of the Chief Counsel, Corps of Engineers, Depart-<br>ment of the Army .....   | 480      |
| Zagata, Michael D., Federal Relations, Audubon Society .....   | 316      |
| Additional material supplied—  |          |
| Agriculture Department:  |          |
| Critical habitat information .....   | 1117     |
| Development of Blanchard Springs Caverns .....   | 439      |
| President's directive on critical habitat memo .....   | 1119     |
| Response to questions of Mr. Leggett .....   | 1103     |
| Army Department:   |          |
| Comments on the proposed status and critical habitat of the Houston<br>Toad .....  | 888      |
| Corps of Engineers projects and permit actions that may possibly<br>jeopardize the continued existence of a listed species or adversely<br>affect critical habitat ..... | 1126     |
| Beard, Hon. Robin L.:  |          |
| Excerpt from Federal Register of January 4, 1978, on Endangered<br>Species Act of 1973, Interagency Cooperation Regulations .....  | 98       |
| Memorandum of Understanding between Department of Interior and<br>Department of Defense .....  | 91       |
| Military Reservations critical habitat .....   | 71       |
| Real property acquisition, management and disposal; Department of<br>Defense Directive .....   | 76       |
| Berger, Michael E.: Resolution relative to the Tellico Dam project .....   | 307      |
| Brown, J. D.: Resolution of the American Public Power Association .....  | 804      |

# VII

## Additional material supplied—Continued

|  | Page      |
|--|-----------|
| Cathcart, John: Article entitled: "One Small Victory" .....  | 1225      |
| Chapman, Dr. Jefferson: National Register of Historic Places .....   | 668       |
| Commerce Department:   |           |
| Endangered species conservation .....  | 1086      |
| Response to questions of Mr. Leggett concerning section 7 .....  | 1085      |
| Dingell, Hon. John D.: Section 7, Interagency Cooperation .....  | 699       |
| GAO: Tellico Dam information .....   | 234       |
| Goslin, Ival V.: Resolution on proposed LaVerkin Springs Salinity Control Unit .....   | 409       |
| Graham, Lt. Col. Richard A.: Bird lovers and bureaucrats at loggerheads over Peregrine falcon .....                          | 835       |
| Interior Department:   |           |
| Answers to questions of Mr. Leggett .....  | 1055      |
| Answers to questions of Mr. Murphy .....   | 881       |
| Biological criteria for critical habitat .....   | 943       |
| Captive propagation program for endangered species .....   | 149       |
| Colorado squawfish information .....   | 899       |
| Critical habitat anticipated to be listed in 1978-79 .....   | 946, 989  |
| Critical habitat finalized .....   | 859       |
| Critical habitat finalized, maps, and descriptions .....   | 955       |
| Ecological distribution of the fishes of the Virgin River .....  | 897       |
| Endangered species permits .....   | 134       |
| Endangered species program, 5-year resource requirements .....   | 116       |
| Excerpt from Code of Federal Regulations on Proposed Determination of Critical Habitat for the Woundfin .....                | 464       |
| Excerpt from Federal Register on Determination of Critical Habitat for the Houston Toad .....                                | 936       |
| Federal funds allocated for States .....   | 158       |
| Fish and Wildlife Service response to issues raised .....  | 1153      |
| Foreign activities (ESA) .....   | 124, 153  |
| Houston toad information .....   | 928       |
| LWCF schedule and appropriations .....   | 136       |
| Land and Water Conservation Fund, obligations fiscal year 1977 .....   | 141       |
| Acquisition schedule fiscal year 1978 .....  | 142       |
| Memorandum of April 3, 1978, to State Director, BLM, on formal consultation on the Allen-Warner valley energy projects ..... | 466       |
| Memorandum of November 9, 1976, on Woundfin recovery team recommendation on critical habitat .....                           | 895       |
| Proposed budget .....  | 921       |
| Outline for use of excess foreign currencies fiscal year 1977-78 .....   | 151       |
| Research contracts, fiscal year 1978 .....   | 144       |
| Should an environmental impact statement be required before listing a species or designating critical habitat? .....         | 877       |
| Species listings (anticipated) .....   | 1011      |
| Species listing (ESA) .....  | 117, 1031 |
| Status of actions on critical habitat .....  | 118       |
| Status of cooperative agreements .....   | 120       |
| Status of Florida Power & Light proceeding around Loxahatchee National Wildlife Refuge with power line .....                 | 876       |
| Status of recovery teams .....   | 126       |
| Views on a balancing mechanism .....   | 879       |
| Leggett, Hon. Robert L.: Court case, <i>Tennessee Valley Authority v. Hill</i> ....  | 565       |
| Opinion .....  | 568       |
| Dissent .....  | 608       |
| Ottinger, Hon. Richard L.:   |           |
| Article from August 1977 Science News: "Antiviral Drugs: Possibilities Against Herpes" .....                                 | 263       |
| Article from Charleston, W. Va., Gazette: "First Antivirus Drug Hailed As Success" .....                                     | 262       |
| Reveal, Dr. James L.:  |           |
| Article entitled, "Miss Furbish's Lousewort Must Live" .....   | 386       |
| Articles on Miss Furbish's lousewort entitled, "Green Guidelines" ...  | 385, 390  |
| Guide to United States and Canadian Rare and Endangered Plant taxa lists .....   | 345       |
| Proposed outline for status reports on threatened and endangered plant species .....   | 359       |

# VIII

## Additional material supplied—Continued

|  | Page  |
|--|-------|
| Retan, Dr. J. Walden: Article of December 27, 1977, from Birmingham News: "Economic Factors Are the Issue Here" .....          | 530   |
| Simonton, Fred G.: Reselution of Mid-West Electric Consumers Association, Inc. ....  | 707   |
| TVA:   |       |
| Answers to questions raised during hearings .....  | 729   |
| Tellico Dam project chronology .....   | 764   |
| Tellico project .....  | 738   |
| Taylor, Connie:  |       |
| Article: "Those Endangered Species" .....  | 520   |
| Endangered species priority system .....   | 523   |
| Modified Sparrow-Wight program—evaluation of taxa for endangered status .....  | 522   |
| Communications submitted—  |       |
| Andrus, Cecil D.:  |       |
| Letter of March 16, 1978, to Lynn Seeber .....   | 790   |
| Letter of April 21, 1978, to Aubrey J. Wagner .....  | 779   |
| Letter of April 28, 1978, to Aubrey J. Wagner .....  | 777   |
| Billhymer, Paul L.: Memorandum of April 6, 1978, to Ival V. Goslin .....   | 412   |
| Blanton, Ray: Letter of March 24, 1975, to Nathaniel Reed .....  | 864   |
| Boddicker, Major L.: Letter of June 15, 1978, to Robert L. Leggett containing testimony for Fur Takers of America .....        | 1216  |
| Bohlen, Curtis:  |       |
| Letter of December 30, 1976, to Mr. Seeber .....   | 865   |
| Letter of January 21, 1977, to Lynn Seeber .....   | 866   |
| Bray, Harvey: Letter of February 20, 1975, to Ray Blanton .....  | 862   |
| Burgner, Daniel: Letter of June 24, 1978, to Congressman Robert Leggett ..   | 654   |
| Cade, Tom J.: Letter of December 22, 1977, to Robert L. Herbst .....   | 837   |
| Carlton, Robert L., Jr.: Letter of July 7, 1978, to Hon. Edwin B. Forsythe ..  | 727   |
| Carter, President Jimmy: Memorandum of May 23, 1977, to Secretaries of Interior, Agriculture, Defense, and Chairman, TVA ..... | 95    |
| Carter, Nick: Letter of April 26, 1978, to Hon. G. William Whitehurst .....  | 401   |
| Catron, Gary R.: Letter of May 23, 1978, to Hon. G. William Whitehurst ..  | 399   |
| Cutler, M. Rupert: Letter of April 14, 1978, to John McGuire .....   | 434   |
| Edey, Marion: Letter of September 20, 1977, to Hon. Robert L. Leggett with response to questions .....                         | 1149  |
| Fliakas, Perry J.: Memorandum to Assistant Secretaries of Army, Navy, Air force, and Commandant, Marine Corps .....            | 78,97 |
| Freeman, S. David: Letter of April 6, 1978, to Cecil D. Andrus .....   | 781   |
| Frye, O. E., Jr.: Letter of January 17, 1977, to Lynn A. Greenwalt .....   | 944   |
| Greenwalt, Lynn A.: Letter of February 16, 1977, to Lynn Seeber .....  | 867   |
| Hales, David F.: Letter of January 6, 1978, to Hon. Robert L. Leggett with answers to questions .....                          | 1054  |
| Joseph, James A.:  |       |
| Letter of April 17, 1978, to Aubrey J. Wagner .....  | 780   |
| Letter of May 2, 1978, to Harold Brown containing paper on "Critical Habitat Priorities" .....                                 | 79    |
| Kreps, Juanita M.: Letter of September 23, 1977, to Chairman Leggett with answers to questions .....                           | 1085  |
| Lyles, Charles H.: Letter of June 16, 1978, to Hon. Robert L. Leggett .....  | 279   |
| McGuire, John R.:  |       |
| Letter of November 3, 1977, to Hon. Robert L. Leggett with response to questions .....   | 1102  |
| Memorandum of June 13, 1975, to foresters and directors .....  | 1115  |
| Nelson, Thomas C.:   |       |
| Memorandum of September 1, 1977, to Regional Foresters on President's directive .....  | 1119  |
| Memorandum of March 16, 1978, on Interagency Cooperation Regulations under the Endangered Species Act .....                    | 442   |
| Norris, Stephen H.: Letter of February 12, 1976, to Lynn A. Greenwalt ....   | 864   |
| O'Connor, Harold:  |       |
| Letter of June 9, 1977, to Vance M. Mays .....   | 886   |
| Letter of December 5, 1977, to Gov. George C. Wallace .....  | 224   |
| Poole, Daniel A.: Letter of April 27, 1978, to Hon. John C. Culver .....   | 546   |
| Ramsey, John S.: Letter of March 13, 1978, to Mrs. Lindsay C. Smith .....  | 531   |

## IX

## Communications submitted—Continued

|  | Page |
|--|------|
| Reed, Nathaniel P.: Letter of March 6, 1978, to Governor Blanton .....                                     | 863  |
| Resler, R. A.: Letter of May 24, 1978, to foresters and directors .....                                    | 433  |
| Seeber, Lynn:  |      |
| Letter of January 7, 1977, to Curtis Bohlen .....  | 865  |
| Telegram of March 22, 1978, to Cecil D. Andrus .....   | 788  |
| Taylor, Dr. Connie: Letter of June 22, 1978, to Representative Leggett .....                               | 1215 |
| Tunney, John V.: Letter of April 21, 1978, to John Culver .....  | 840  |
| United Peregrine Society, Inc.: Letter of April 24, 1978, to Hon. John C. Culver .....                     | 840  |
| Upper Duck River Development Agency: Letter of May 18, 1978, to Hon. Robert L. Leggett .....               | 191  |
| Wagner, Aubrey J.:   |      |
| Letter of March 31, 1978, to Cecil D. Andrus .....   | 783  |
| Letter of April 26, 1978, to Cecil D. Andrus .....   | 778  |
| Letter to Cecil D. Andrus in further response to letter of March 16 .....                                  | 770  |
| Wagner, Robert O.: Letter of June 2, 1978, to Director, Fish and Wildlife Service .....                    | 499  |
| Wallace, Gov. George C.: Letter of February 21, 1978, to Director, Office of Endangered Species, FWS ..... | 225  |
| White, John C.: Letter of April 19, 1978, to J. Walden Retan .....   | 529  |
| Willoughby, Harvey: Letter of February 1, 1978, to Roland C. Fischer .....                                 | 685  |
| Wilson, Brig. Gen. Drake: Letter of April 17, 1978, to Hon. Robert L. Leggett .....                        | 1125 |

# ENDANGERED SPECIES OVERSIGHT

---

TUESDAY, JUNE 20, 1978

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON FISHERIES AND WILDLIFE  
CONSERVATION AND THE ENVIRONMENT OF THE  
COMMITTEE ON MERCHANT MARINE AND FISHERIES,  
*Washington, D.C.*

The subcommittee met, pursuant to notice, at 10:34 a.m., in room 2226 Rayburn House Office Building, Hon. Robert L. Leggett, chairman of the subcommittee, presiding.

Present: Representatives Leggett, AuCoin, Bonior, Forsythe, and Emery.

Staff Present: Robert D. Thornton, counsel; Marvadell Zeeb, subcommittee clerk; George J. Mannina, Jr., professional staff, minority; and Charles A. Bedell, deputy minority counsel.

Mr. LEGGETT. The meeting of the Subcommittee on Fisheries and Wildlife Conservation and the Environment will please come to order. This is our sixth day of hearings of oversight on the Endangered Species Act. We wanted to give away Member of Congress, whether or not they have reservations concerning the Endangered Species Act, an opportunity to come before the subcommittee and fully present their views on the operations of the act. We have heard a number of individuals on this subject. We have looked at the possible impacts of classifying several hundreds of endangered plants under the act. It appears that section 7 of the act is written rather sternly, and was interpreted last week by the Supreme Court of the United States as justifying the decision that was rendered by the lower court in the appellate case.

Our problem now is to determine whether or not that is exactly the policy that we want to continue.

The Senate, of course, has held hearings on the subject matter, and they have come up with a program looking toward a rather complex, extremely high level commission which would be called into meeting occasionally to review the unresolvable cases.

This subcommittee, in its hearings, has generally determined that we would like a more free flowing situation. I think it is also the general view that the Endangered Species Act is a very large plus for environmental protection in the United States.

We certainly intend to extend the act. The question before the subcommittee is whether or not there are any sharp corners in the act that need to be rounded out to provide better consultation, insight, and workability.

That is generally the position of the subcommittee at this point, but we have not reached any final conclusions. We have scheduled this morning a large number of folks as a panel.

We will insert the opinion of the United States Supreme Court in the case of *Hill v. Tennessee Valley Authority*.  
[The material follows:]

NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Lumber Co.*, 200 U.S. 321, 337.

# SUPREME COURT OF THE UNITED STATES

## Syllabus

### TENNESSEE VALLEY AUTHORITY *v.* HILL ET AL.

#### CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SIXTH CIRCUIT

No. 76-1701. Argued April 18, 1978—Decided June 15, 1978

The Endangered Species Act of 1973 (Act) authorizes the Secretary of the Interior (Secretary) in § 4 to declare a species of life "endangered." Section 7 specifies that all "Federal departments and agencies shall, . . . with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of [the] Act by carrying out programs for the conservation of endangered species . . . and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species or result in the destruction or modification of habitat of such species which is determined by the Secretary . . . to be critical." Shortly after the Act's passage the Secretary was petitioned to list a small fish popularly known as the snail darter as an endangered species under the Act. Thereafter the Secretary made the designation. Having determined that the snail darter apparently lives only in that portion of the Little Tennessee River that would be completely inundated by the impoundment of the reservoir created as a consequence of the completion of the Tellico Dam, he declared that area as the snail darter's "critical habitat." Notwithstanding the near completion of the multimillion-dollar dam, the Secretary issued a regulation, in which it was declared that, pursuant to § 7, "all Federal agencies must take such action as is necessary to ensure that actions authorized, funded, or carried out by them do not result in the destruction or modification of this critical habitat area." Respondents brought this suit to enjoin completion of the dam and impoundment of the reservoir, claiming that those actions would violate the Act by causing the snail darter's extinction. The District Court after trial denied relief and dismissed the complaint. Though finding that the impoundment of the reservoir would probably jeopardize the snail darter's continued existence, the court noted that Congress, though fully aware of the snail darter problem, had continued



## TVA v. HILL

## Syllabus

Tellico's appropriations, and concluded that "[a]t some point in time a federal project becomes so near completion and so incapable of modification that a court of equity should not apply a statute enacted long after inception to produce an unreasonable result . . . ." The Court of Appeals reversed the District Court's judgment and permanently enjoined completion of the project "until Congress, by appropriate legislation, exempts Tellico from compliance with the Act or the snail darter has been deleted from the list of endangered species or its critical habitat materially redefined." The court held that the record revealed a prima facie violation of § 7 in that TVA had failed to take necessary action to avoid jeopardizing the snail darter's critical habitat by its "actions." The court thus rejected the contention that the word "actions" as used in § 7 was not intended by Congress to encompass the terminal phases of ongoing projects. At various times before, during, and after the foregoing judicial proceedings, TVA represented to congressional appropriations committees that the Act did not prohibit completion of the Tellico Project and described its efforts to transplant the snail darter. The committees consistently recommended appropriations for the dam, sometimes stating their views that the Act did not prohibit completion of the dam at its advanced stage, and Congress each time approved TVA's general budget, which contained funds for the dam's continued construction. *Held:*

1. The Endangered Species Act prohibits impoundment of the Little Tennessee River by the Tellico Dam. Pp. 17-37.

(a) The language of § 7 is plain and makes no exception such as that urged by petitioner whereby the Act would not apply to a project like Tellico that was well under way when Congress passed the Act. Pp. 17-19.

(b) It is clear from the Act's legislative history that Congress intended to halt and reverse the trend toward species extinction—whatever the cost. The pointed omission of the type of qualified language previously included in endangered species legislation reveals a conscious congressional design to give endangered species priority over the "primary missions" of federal agencies. Congress, moreover, foresaw that § 7 would on occasion require agencies to alter ongoing projects in order to fulfill the Act's goals. Pp. 19-31.

(c) None of the limited "hardship exemptions" provided in the Act would even remotely apply to the Tellico Project. P. 32.

(d) Though statements in appropriations committee reports reflected the view of the committees either that the Act did not apply to Tellico or that the dam should be completed regardless of the Act's provisions, nothing in the TVA appropriations measures passed by Congress stated

## TVA v. HILL

## Syllabus

that the Tellico Project was to be completed regardless of the Act's requirements. To find a repeal under these circumstances, as petitioner has urged, would violate the "cardinal rule . . . that repeals by implication are not favored." *Morton v. Mancusi*, 417 U. S. 535, 549. Pp. 33-37.

2. The Court of Appeals did not err in enjoining completion of the Tellico Dam, which would have violated the Act. Congress has spoken in the plainest words, making it clear that endangered species are to be accorded the highest priorities. Since that legislative power has been exercised, it is up to the Executive Branch to administer the law and for the judiciary to enforce it when, as here, enforcement has been sought. Pp. 37-39.

549 F. 2d 1064, affirmed.

BURGER, C. J., delivered the opinion of the Court, in which BRENNAN, STEWART, WHITE, MARSHALL, and STEVENS, JJ., joined. POWELL, J., filed a dissenting opinion, in which BLACKMUN, J., joined. REHNQUIST, J., filed a dissenting opinion.

**NOTICE:** This opinion is subject to formal revision before publication in the preliminary print of the United States Reports. Readers are requested to notify the Reporter of Decisions, Supreme Court of the United States, Washington, D.C. 20543, of any typographical or other formal errors, in order that corrections may be made before the preliminary print goes to press.

## SUPREME COURT OF THE UNITED STATES

No. 76-1701

|   |   |   |
|---|---|---|
| <p>Tennessee Valley Authority,<br/>         Petitioner,<br/>         v.<br/>         Hiram G. Hill, Jr., et al.</p> | } | <p>On Writ of Certiorari to the<br/>         United States Court of Ap-<br/>         peals for the Sixth Circuit.</p> |
|---|---|---|

[June 15, 1978]

MR. CHIEF JUSTICE BURGER delivered the opinion of the Court.

The questions presented in this case are (a) whether the Endangered Species Act of 1973 requires a court to enjoin the operation of a virtually completed federal dam—which had been authorized prior to 1973—when, pursuant to authority vested in him by Congress, the Secretary of the Interior has determined that operation of the dam would eradicate an endangered species; and (b) whether continued congressional appropriations for the dam after 1973 constituted an implied repeal of the Endangered Species Act, at least as to the particular dam.

### I

The Little Tennessee River originates in the mountains of northern Georgia and flows through the national forest lands of North Carolina into Tennessee, where it converges with the Big Tennessee River near Knoxville. The lower 33 miles of the Little Tennessee takes the river's clear, free-flowing waters through an area of great natural beauty. Among other environmental amenities, this stretch of river is said to contain abundant trout. Considerable historical importance attaches to the areas immediately adjacent to this portion of the Little

## 76-1701—OPINION

## TVA v. HILL

Tennessee's banks. To the south of the river's edge lies Fort Loudon, established in 1756 as England's southwestern outpost in the French and Indian War. Nearby are also the ancient sites of several native American villages, the archeological stores of which are to a large extent unexplored.<sup>1</sup> These include the Cherokee towns of Echota and Tennase, the former being the sacred capital of the Cherokee Nation as early as the 16th century and the latter providing the linguistic basis from which the State of Tennessee derives its name.<sup>2</sup>

In this area of the Little Tennessee River the Tennessee Valley Authority, a wholly owned public corporation of the United States, began constructing the Tellico Dam and Reservoir Project in 1967, shortly after Congress appropriated initial funds for its development.<sup>3</sup> Tellico is a multipurpose regional development project designed principally to stimulate shoreline development, generate sufficient electric current to heat 20,000 homes,<sup>4</sup> provide flatwater recreation and flood control, as well as improve economic conditions in "an area characterized by underutilization of human resources and

---

<sup>1</sup> This description is taken from the opinion of the District Judge in the first litigation involving the Tellico Dam and Reservoir Project. *Environmental Defense Fund v. Tennessee Valley Authority*, 339 F. Supp. 806, 808 (ED Tenn. 1972). In his opinion, "all of these benefits of the present Little Tennessee River Valley will be destroyed by impoundment of the river . . . ." *Ibid.* The District Judge noted that "the free-flowing river is the likely habitat of one or more of seven rare or endangered species." *Ibid.*

<sup>2</sup> See *Amicus Curiae* Brief of the Eastern Band of Cherokee Indians, at 2. See also Mooney, *Myths of the Cherokee and Sacred Formulas of the Cherokee*, 19th Annual Report of the Bureau of American Ethnology (1900); H. Timberlake, *Memoirs, 1756-1765* (Watauga Press 1927); A. Brewer and C. Brewer, *Valley So Wild: A Folk History* (East Tenn. Historical Soc'y 1975).

<sup>3</sup> Public Works Appropriations Act, 1967, 80 Stat. 1002, 1014.

<sup>4</sup> Tellico Dam itself will contain no electric generators; however, an interreservoir canal connecting Tellico Reservoir with a nearby hydroelectric plant will augment the latter's capacity.

## 76-1701—OPINION

## TVA v. HILL

outmigration of young people.” Hearings before a Subcommittee of the House Committee on Appropriations, 94th Cong., 2d Sess., at 261. Of particular relevance to this case is one aspect of the project, a dam which TVA determined to place on the Little Tennessee, a short distance from where the river’s waters meet with the Big Tennessee. When fully operational, the dam would impound water covering some 16,500 acres—much of which represents valuable and productive farmland—thereby converting the river’s shallow, fast-flowing waters into a deep reservoir over 30 miles in length.

The Tellico Dam has never opened, however, despite the fact that construction has been virtually completed and the dam is essentially ready for operation. Although Congress has appropriated monies for Tellico every year since 1967, progress was delayed, and ultimately stopped, by a tangle of lawsuits and administrative proceedings. After unsuccessfully urging TVA to consider alternatives to damming the Little Tennessee, local citizens and national conservation groups brought suit in the District Court, claiming that the project did not conform to the requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U. S. C. § 4331 *et seq.* After finding TVA to be in violation of NEPA, the District Court enjoined the dam’s completion pending the filing of an appropriate Environmental Impact Statement. *Environmental Defense Fund v. Tennessee Valley Authority*, 339 F. Supp. 806 (ED Tenn. 1972), *aff’d*, 468 F. 2d 1164 (CA6 1972). The injunction remained in effect until late 1973, when the District Court concluded that TVA’s final Environmental Impact Statement for Tellico was in compliance with the law. *Environmental Defense Fund v. Tennessee Valley Authority*, 371 F. Supp. 1004 (ED Tenn. 1973), *aff’d*, 492 F. 2d 466 (CA6 1974).<sup>5</sup>

---

<sup>5</sup> The NEPA injunction was in effect some 21 months; when it was entered TVA had spent some \$29 million on the project. Most of these funds have gone to purchase land, construct the concrete portions of the dam, and build a four-lane steel span bridge to carry a state highway over the proposed reservoir. 339 F. Supp., at 808.

## 76-1701—OPINION

## TVA v. HILL

A few months prior to the District Court's decision dissolving the NEPA injunction, a discovery was made in the waters of the Little Tennessee which would profoundly affect the Tellico Project. Exploring the area around Coytee Springs, which is about seven miles from the mouth of the river, a University of Tennessee ichthyologist, Dr. David A. Etnier, found a previously unknown species of perch, the snail darter, or *Percina Imostoma tanasi*.<sup>6</sup> This three-inch, tannish-colored fish, whose numbers are estimated to be in the range of 10,000 to 15,000, would soon engage the attention of environmentalists, the TVA, the Department of the Interior, the Congress of the United States, and ultimately the federal courts, as a new and additional basis to halt construction of the dam.

Until recently the finding of a new species of animal life would hardly generate a cause celebre. This is particularly so in the case of darters, of which there are approximately 130 known species, eight to 10 of these having been identified only in the last five years.<sup>7</sup> The moving force behind the snail darter's sudden fame came some four months after its discovery, when the Congress passed the Endangered Species Act of 1973, 87 Stat. 884, 16 U. S. C. 1531 *et seq.* 1976 ("Act"). This legislation, among other things, authorizes the Secretary of the Interior to declare species of animal life "endangered"<sup>8</sup>

---

<sup>6</sup> The snail darter was scientifically described by Dr. Etnier in the Proceedings of the Biological Society of Washington, Vol. 88, No. 44, at 469-488 (Jan. 22, 1976). The scientific merit and content of Dr. Etnier's paper on the snail darter were checked by a panel from the Smithsonian Institution prior to publication. See App., at 111.

<sup>7</sup> In Tennessee alone there are 85 to 90 species of darters, App., at 131, of which upward to 45 live in the Tennessee River system. *Id.*, at 130. New species of darters are being constantly discovered and classified—at the rate of about one per year. *Id.*, at 131. This is a difficult task for even trained ichthyologists since species of darters are often hard to differentiate from one another. *Ibid.*

<sup>8</sup> An "endangered species" is defined by the Act to mean "any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the

## 76-1701—OPINION

## TVA v. HILL

and to identify the "critical habitat"<sup>o</sup> of these creatures. When a species or its habitat is so listed, the following portion of the Act—relevant here—becomes effective:

"The Secretary [of the Interior] shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species

---

Secretary to constitute a pest whose protection under the provisions of this chapter would present an overwhelming and overriding risk to man." 16 U. S. C. § 1532 (4).

"The act covers every animal and plant species, subspecies, and population in the world needing protection. There are approximately 1.4 million full species of animals and 600,000 full species of plants in the world. Various authorities calculate as many as 10% of them—some 200,000—may need to be listed as Endangered or Threatened. When one counts subspecies, not to mention individual populations, the total could increase to three to five times that number." Keith Shreiner, Associate Director and Endangered Species Program Manager of the U. S. Fish and Wildlife Service, quoted in a letter from A. J. Wagner, Chairman TVA, to Chairman, House Committee on Merchant Marine and Fisheries, dated April 25, 1977, quoted in Wood, *On Protecting an Endangered Statute: The Endangered Species Act of 1973*, 37 Federal Bar Journal 25, 27 (1978).

<sup>o</sup> The Act does not define "critical habitat," but the Secretary of the Interior has administratively construed the term:

"'Critical habitat' means any air, land, or water area (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species) and constituent elements thereof, the loss of which would appreciably decrease the likelihood of the survival and recovery of a listed species or a distinct segment of its population. The constituent elements of critical habitat include, but are not limited to: physical structures and topography, biota, climate, human activity, and the quality and chemical content of land, water, and air. Critical habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion." 50 CFR § 402.02, 43 Fed. Reg. 874.

## 76-1701—OPINION

## TVA v. HILL

and threatened species listed pursuant to section 4 of this Act and *by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species* which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.” 16 U. S. C. § 1536 (emphasis added).

In January 1975, the respondents in this case<sup>10</sup> and others petitioned the Secretary of the Interior<sup>11</sup> to list the snail darter as an endangered species. After receiving comments from various interested parties, including TVA and the State of Tennessee, the Secretary formally listed the snail darter as an endangered species on November 10, 1975. 40 Fed. Reg. 47505-47506; see 50 CFR § 17.11 (i). In so acting, it was noted that “the snail darter is a living entity which is genetically distinct and reproductively isolated from other species.” 40 Fed. Reg., at 47505. More important for the purposes of this case, the Secretary determined that the snail darter apparently lives only in that portion of the Little Tennessee River which would be completely inundated by the reservoir created as a consequence of the Tellico Dam’s completion. *Id.*, at 47506.<sup>12</sup> The Secretary went on to explain the significance of the dam to the habitat of the snail darter:

“[T]he snail darter occurs only in the swifter portions of

---

<sup>10</sup> Respondents are a regional association of biological scientists, a Tennessee conversation group and individuals who are citizens or users of the Little Tennessee Valley area which would be affected by the Tellico Project.

<sup>11</sup> The Act authorizes “interested persons” to petition the Secretary of the Interior to list a species as endangered. 16 U. S. C. § 1533 (c)(2); see 5 U. S. C. § 553 (e).

<sup>12</sup> Searches by TVA in more than 60 watercourses have failed to find other populations of snail darters. App. 36; 410-412. The Secretary has noted that “more than 1,000 collections in recent years and additional



## 76-1701—OPINION

## TVA v. HILL

shoals over clean gravel substrate in cool, low-turbidity water. Food of the snail darter is almost exclusively snails which require a clean gravel substrate for their survival. *The proposed impoundment of water behind the proposed Tellico Dam would result in total destruction of the snail darter's habitat.*" *Ibid.* (emphasis added).

Subsequent to this determination, the Secretary declared the area of the Little Tennessee which would be affected by the Tellico Dam to be the "critical habitat" of the snail darter. 41 Fed. Reg. 13926-13928; see 50 CFR § 17.81. Using these determinations as a predicate, and notwithstanding the near completion of the dam, the Secretary declared that pursuant to § 7 of the Act, "all Federal agencies must take such action as is necessary to insure that actions authorized, funded, or carried out by them do not result in the destruction or modification of this critical habitat area." 41 Fed. Reg., at 13928; 50 CFR, at § 17.81 (b). This notice, of course, was pointedly directed at TVA and clearly aimed at halting completion or operation of the dam.

During the pendency of these administrative actions, other developments of relevance to the snail darter issue were transpiring. Communication was occurring between the Department of the Interior's Fish and Wildlife Service and TVA with

---

earlier collections from central and east Tennessee have not revealed the presence of the snail darter outside the Little Tennessee River." 40 Fed. Reg. 47505. It is estimated, however, that the snail darter's range once extended throughout the upper main Tennessee River and the lower portions of its major tributaries above Chattanooga—all of which are now the sites of dam impoundments. See Hearings on Public Works for Water and Power Development and Energy Research Appropriation Bill, 1978, before a Subcommittee of the House Committee on Appropriations, 95th Cong., 1st Sess., Pt. 4, 240-241 (1977) (Statement of witness for TVA); Hearings on the Endangered Species Act, before a Subcommittee of the Senate Committee on Environmental and Public Works, 95th Cong., 1st Sess., 291 (1977); App. 139.

## 76-1701—OPINION

## TVA v. HILL

a view toward settling the issue informally. These negotiations were to no avail, however, since TVA consistently took the position that the only available alternative was to attempt relocating the snail darter population to another suitable location. To this end, TVA conducted a search of alternate sites which might sustain the fish, culminating in the experimental transplantation of a number of snail darters to the nearby Hiwassee River. However, the Secretary of the Interior was not satisfied with the results of these efforts, finding that TVA had presented "little evidence that they have carefully studied the Hiwassee to determine whether or not" there were "biological and other factors in this river that [would] negate a successful transplant."<sup>13</sup> 40 Fed. Reg., at 47506.

Meanwhile, Congress had also become involved in the fate of the snail darter. Appearing before a Subcommittee of the House Committee on Appropriations in April 1975—some seven months before the snail darter was listed as endangered—TVA representatives described the discovery of the fish and the relevance of the Endangered Species Act to the Tellico Project. Hearings on Public Works for Water and Power Development and Energy Research Appropriation Bill, 1976, before a Subcommittee of the House Committee on Appropriations, 94th Cong., 1st Sess., Pt. 7, 466-467 (1976); Hearings on Public Works for Water and Power Development and Energy Research Appropriation Bill, 1976, before a Subcommittee of the Senate Committee on Appropriations, 94th Cong.,

---

<sup>13</sup> The Fish and Wildlife Service and Dr. Etnier have stated that it may take from five to 15 years for scientists to determine whether the snail darter can successfully survive and reproduce in this new environment. See General Accounting Office, *The Tennessee Valley Authority's Tellico Dam Project—Costs, Alternatives, and Benefits*, at 4 (Oct. 14, 1977). In expressing doubt over the long term future of the Hiwassee transplant, the Secretary noted: "That the snail darter does not already inhabit the Hiwassee River, despite the fact that the fish has had access to it in the past, is a strong indication that there may be biological and other factors in this river that negate a successful transplant." 40 Fed. Reg. 47506.

## 76-1701—OPINION

## TVA v. HILL

1st Sess., Pt. 4, 3775-3777 (1975). At that time TVA presented a position which it would advance in successive forums thereafter, namely, that the Act did not prohibit the completion of a project authorized, funded, and substantially constructed before the Act was passed. TVA also described its efforts to transplant the snail darter, but contended that the dam should be finished regardless of the experiment's success. Thereafter, the House Committee on Appropriations, in its June 20, 1975 report, stated the following in the course of recommending that an additional \$29 million be appropriated for Tellico:

"The *Committee* directs that the project, for which an environmental impact statement has been completed and provided the Committee, should be completed as promptly as possible. . . ." H. R. Rep. No. 94-319, 94th Cong., 1st Sess., 76 (1975). (Emphasis added.)

Congress then approved the TVA general budget, which contained funds for continued construction of the Tellico Project.<sup>14</sup> In December 1975, one month after the snail darter was declared an endangered species, the President signed the bill into law. Public Works for Water and Power Development and Energy Research Appropriations Act, 1976, 89 Stat. 1035, 1047.

In February 1976, pursuant to § 11 (g) of the Endangered Species Act, 16 U. S. C. § 1540 (g),<sup>15</sup> respondents filed the case now under review, seeking to enjoin completion of the dam and impoundment of the reservoir on the ground that those actions would violate the Act by directly causing the

---

<sup>14</sup> TVA projects generally are authorized by the Authority itself and are funded—without the need for specific congressional authorization—from lump sum appropriations provided in yearly budget grants. See 16 U. S. C. §§ 831c (j) and 831z.

<sup>15</sup> Section 1540 (g) allows "any person" to commence a civil action in a United States District Court to, *inter alia*, "enjoin any person, including the United States and any other governmental instrumentality or agency (to the extent permitted by the eleventh amendment to the Constitution), who is alleged to be in violation of any provision" of the Act "or regulation issued under the authority thereof . . . ."

## 76-1701—OPINION

## TVA v. HILL

extinction of the species *Percina Imostoma tanasi*. The District Court denied respondent's request for a preliminary injunction and set the matter for trial. Shortly thereafter the House and Senate held appropriations hearings which would include discussions of the Tellico budget.

At these hearings, TVA Chairman Wagner reiterated the agency's position that the Act did not apply to a project which was over 50% finished by the time the Act became effective and some 70 to 80% complete when the snail darter was officially listed as endangered. It also notified the Committees of the recently filed lawsuit's status and reported that TVA's efforts to transplant the snail darter had "been very encouraging." Hearings on Public Works for Water and Power Development and Energy Research and Appropriation Bill, 1977, before a Subcommittee of the House Committee on Appropriations, 94th Cong., 2d Sess., Part 5, 261-262 (1976); Hearings on Public Works for Water and Power Development and Energy Research Appropriations Bill, 1977, before a Subcommittee of the Senate Committee on Appropriations, 94th Cong., 2d Sess., Part 4, 3096-3099 (1976).

Trial was held in the District Court on April 29 and 30, 1976, and on May 25, 1976, the court entered its memorandum opinion and order denying respondents their requested relief and dismissing the complaint. The District Court found that closure of the dam and the consequent impoundment of the reservoir would "result in the adverse modification, if not complete destruction, of the snail darter's critical habitat,"<sup>16</sup>

---

<sup>16</sup> The District Court made the following findings with respect to the dam's effect on the ecology of the snail darter:

"The evidence introduced at trial showed that the snail darter requires for its survival a clear, gravel substrate, in a large-to-medium, flowing river. The snail darter has a fairly high requirement for oxygen and since it tends to exist in the bottom of the river, the flowing water provides the necessary oxygen at greater depths. Reservoirs, unlike flowing rivers, tend to have a low oxygen content at greater depths.

"Reservoirs also tend to have more silt on the bottom than flowing rivers,

## 76-1701—OPINION

## TVA v. HILL

making it "highly probable" that "the continued existence of the snail darter" would be "jeopardize[d]." *Hill v. Tennessee Valley Authority*, 419 F. Supp. 753, 757 (ED Tenn. 1976). Despite these findings, the District Court declined to embrace the plaintiffs' position on the merits: that once a federal project was shown to jeopardize an endangered species, a court of equity is compelled to issue an injunction restraining violation of the Endangered Species Act.

In reaching this result, the District Court stressed that the entire project was then about 80% complete and, based on available evidence, "there [were] no alternatives to impoundment of the reservoir, short of scrapping the entire project." 419 F. Supp., at 758. The District Court also found that if the Tellico Project was permanently enjoined, "some \$53 million would be lost in nonrecoverable obligations," 419 F. Supp., at 753, meaning that a large portion of the \$78 million already expended would be wasted. The court also noted that the Endangered Species Act of 1973 was passed some seven years after construction on the dam commenced and that Congress had continued appropriations for Tellico, with full awareness of the snail darter problem. Assessing these various factors, the District Court concluded:

"At some point in time a federal project becomes so near completion and so incapable of modification that a court of equity should not apply a statute enacted long after inception to produce an unreasonable result . . . . Where there has been an irreversible and irretrievable commitment of resources by Congress to a project over a span of

---

and this factor, combined with the lower oxygen content, would make it highly probable that snail darter eggs would smother in such an environment. Furthermore, the adult snail darters would probably find this type of reservoir environment unsuitable for spawning.

"Another factor that would tend to make a reservoir habitat unsuitable for snail darters is that their primary source of food, snails, probably would not survive in such an environment." 419 F. Supp., at 756.

## 76-1701—OPINION

## TVA v. HILL

almost a decade, the Court should proceed with a great deal of circumspection." 419 F. Supp., at 760.

To accept the plaintiffs' position, the District Court argued, would inexorably lead to what it characterized as the absurd result of requiring "a court to halt impoundment of water behind a fully completed dam if an endangered species were discovered in the river on the day before such impoundment was scheduled to take place. We cannot conceive that Congress intended such a result." 419 F. Supp., at 763.

Less than a month after the District Court decision, the Senate and House Appropriations Committees recommended the full budget request of \$9 million for continued work on Tellico. See S. Rep. No. 94-960, 94th Cong., 2d Sess., 96 (1976); H. R. Rep. No. 94-1223, 94th Cong., 2d Sess., 83 (1976). In its report accompanying the appropriations bill, the Senate Committee stated:

"During subcommittee hearings, TVA was questioned about the relationship between the Tellico project's completion and the November 1975 listing of the snail darter (a small three-inch fish which was discovered in 1973) as an endangered species under the Endangered Species Act. TVA informed the Committee that it was continuing its efforts to preserve the darter, while working towards the scheduled 1977 completion date. TVA repeated its view that the Endangered Species Act did not prevent the completion of the Tellico project, which has been under construction for nearly a decade. The subcommittee brought this matter, as well as the recent U. S. District Court's decision upholding TVA's decision to complete the project, to the attention of the full Committee. *The Committee does not view the Endangered Species Act as prohibiting the completion of the Tellico project at its advanced stage and directs that this project be completed as promptly as possible in the public interest.*" S. Rep. No. 94-960, *supra*, at 96. (Emphasis added.)

## 76-1701—OPINION

## TVA v. HILL

On June 29, 1976, both Houses of Congress passed TVA's general budget, which included funds for Tellico; the President signed the bill on July 12, 1976. Public Works for Water and Power Development and Energy Research Appropriations Act, 1977, Pub. L. 94-355, 90 Stat. 889, 899.

Thereafter, in the Court of Appeals, respondents argued that the District Court had abused its discretion by not issuing an injunction in the face of "a blatant statutory violation." *Hill v. Tennessee Valley Authority*, 549 F. 2d 1064, 1069 (CA6 1977). That court agreed, and on January 31, 1977 it reversed, remanding "with instructions that a permanent injunction issue halting all activities incident to the Tellico Project which may destroy or modify the critical habitat of the snail darter." 549 F. 2d, at 1075. The Court of Appeals directed that the injunction "remain in effect until Congress, by appropriate legislation, exempts Tellico from compliance with the Act or the snail darter has been deleted from the list of endangered species or its critical habitat materially redefined." *Ibid.*

The Court of Appeals accepted the District Court's finding that closure of the dam would result in the known population of snail darters being "significantly reduced if not completely extirpated." 549 F. 2d, at 1069. TVA, in fact, had conceded as much in the Court of Appeals, but argued that "closure of the Tellico Dam, as the last stage of a 10-year project, falls outside the legitimate purview of the Act if it is rationally construed." 549 F. 2d, at 1070. Disagreeing, the Court of Appeals held that the record revealed a prima facie violation of § 7 of the Act, namely that TVA had failed to take "such action necessary to insure" that its "actions" did not jeopardize the snail darter or its critical habitat.

The reviewing court thus rejected TVA's contention that the word "actions" in § 7 of the Act was not intended by Congress to encompass the terminal phases of ongoing projects. Not only could the court find no "positive reinforcement" for TVA's argument in the Act's legislative history, but such an

## 76-1701—OPINION

## TVA v. HILL

interpretation was seen as being "inimical to . . . its objectives." 549 F. 2d, at 1070. By way of illustration, that court pointed out that "the detrimental impact of a project upon an endangered species may not always be clearly perceived before construction is well underway." *Ibid.* Given such a likelihood, the Court of Appeals was of the opinion that TVA's position would require the District Court, sitting as a chancellor, to balance the worth of an endangered species against the value of an ongoing public works measure, a result which that court was not willing to accept. Emphasizing the limits on judicial power in this setting, the court stated:

"Current project status cannot be translated into a workable standard of judicial review. Whether a dam is 50 percent or 90 percent completed is irrelevant in calculating the social and scientific costs attributable to the disappearance of a unique form of life. Courts are ill-equipped to calculate how many dollars must be invested before the value of a dam exceeds that of the endangered species. Our responsibility under § 1540 (g)(1)(A) is merely to preserve the status quo where endangered species are threatened, thereby guaranteeing the legislative or executive branches sufficient opportunity to grapple with the alternatives." 549 F. 2d, at 1071.

As far as the Court of Appeals was concerned, it made no difference that Congress had repeatedly approved appropriations for Tellico, referring to such legislative approval as an "advisory opinion" concerning the proper application of an existing statute. In that court's view, the only relevant legislation was the Act itself, "the meaning and spirit" of which was "clear on its face." 549 F. 2d, at 1072.

Turning to the question of an appropriate remedy, the Court of Appeals ruled that the District Court had erred by not issuing an injunction. While recognizing the irretrievable loss of millions of dollars of public funds which would accompany



## 76-1701—OPINION

## TVA v. HILL

injunctive relief, the court nonetheless decided that the Act explicitly commanded precisely that result:

"It is conceivable that the welfare of an endangered species may weigh more heavily upon the public conscience, as expressed by the final will of Congress, than the writeoff of those millions of dollars already expended for Tellico in excess of its present salvageable value." 549 F. 2d, at 1074.

Following the issuance of the permanent injunction, members of TVA's Board of Directors appeared before Subcommittees of the House and Senate Appropriations Committees to testify in support of continued appropriations for Tellico. The subcommittees were apprised of all aspects of Tellico's status, including the Court of Appeal's decision. TVA reported that the dam stood "ready for the gates to be closed and the reservoir filled," Hearings on Public Works for Water and Power Development and Energy Research Appropriation Bill, 1978, before a Subcommittee of the House Committee on Appropriations, 95 Cong., 1st Sess., Part 4, 234 (1977), and requested funds for completion of certain ancillary parts of the project, such as public use areas, roads and bridges. As to the snail darter itself, TVA commented optimistically on its transplantation efforts, expressing the opinion that the relocated fish were "doing well and ha[d] reproduced." *Id.*, at 235, 261-262.

Both appropriations committees subsequently recommended the full amount requested for completion of the Tellico Project. In its June 2, 1977 report, the House Appropriations Committee stated:

"It is the Committee's view that the Endangered Species Act was not intended to halt projects such as these in their advanced stage of completion, and [the Committee] strongly recommends that these projects not be stopped because of misuse of the Act." H. R. Rep. No. 95-379, 95th Cong., 1st Sess., 104. (Emphasis added.)

## 76-1701—OPINION

## TVA v. HILL

As a solution to the problem, the House Committee advised that TVA should cooperate with the Department of the Interior "to relocate the endangered species to another suitable habitat so as to permit the project to proceed as rapidly as possible." *Id.*, at 11. Toward this end, the committee recommended a special appropriation of \$2 million to facilitate relocation of the snail darter and other endangered species which threatened to delay or stop TVA projects. Much the same occurred on the Senate side, with its Appropriations Committee recommending both the amount requested to complete Tellico and the special appropriation for transplantation of endangered species. Reporting to the Senate on these measures, the Appropriations Committee took a particularly strong stand on the snail darter issue:

"This committee has not viewed the Endangered Species Act as preventing the completion and use of these projects which were well under way at the time the affected species were listed as endangered. If the act has such an effect, which is contrary to the Committee's understanding of the intent of Congress in enacting the Endangered Species Act, funds should be appropriated to allow these projects to be completed and their benefits realized in the public interest, the Endangered Species Act notwithstanding." S. Rep. No. 95-301, 95th Cong., 1st Sess., 99 (1977). (Emphasis added.)

TVA's budget, including funds for completion of Tellico and relocation of the snail darter, passed both Houses of Congress and was signed into law on August 7, 1977. Public Works for Water and Power Development and Energy Research Appropriations Act, 1978, Pub. L. 95-96, 91 Stat. 797.

We granted certiorari, — U. S. — (1977), to review the judgment of the Court of Appeals.

## II

We begin with the premise that operation of the Tellico

## 76-1701—OPINION

## TVA v. HILL

we must, it is clear that TVA's proposed operation of the dam will have precisely the opposite effect, namely the *eradication* of an endangered species.

Concededly, this view of the Act will produce results requiring the sacrifice of the anticipated benefits of the project and of many millions of dollars in public funds.<sup>19</sup> But examination of the language, history and structure of the legislation under review here indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities.

When Congress passed the Act in 1973, it was not legislating on a clean slate. The first major congressional concern for the preservation of the endangered species had come with passage of the Endangered Species Act of 1966, 80 Stat. 926, repealed 87 Stat. 903 (1973).<sup>20</sup> In that legislation Congress

---

several counts. First, under its view, the words "or carry out" in § 7 would be superfluous since all prospective actions of an agency remain to be "authorized" or "funded." Second, the dissent's position logically means that an agency would be obligated to comply with § 7 only when a project is in the planning stage. But if Congress had meant to so limit the Act, it surely would have used words to that effect, as it did in the National Environmental Policy Act, 42 U. S. C. §§ 4332 (2) (A), (C) (1970).

<sup>19</sup> The District Court determined that failure to complete the Tellico Dam would result in the loss of some \$53 million in nonrecoverable obligations; see *supra*, at 10. Respondents dispute this figure, and point to a recent study by the General Accounting Office, which suggests that the figure could be considerably less. See GAO Study, *supra*, at 8 n. 13, at 5-14; see also Cook, Cook & Gove, The Snail Darter and the Dam, 51 National Parks & Conservation Magazine 10 (1977); Conservation Foundation Letter, at 1-2 (April 1978). The GAO study also concludes that TVA and Congress should explore alternatives to impoundment of the reservoir, such as the creation of a regional development program based on a free-flowing river. None of these considerations are relevant to our decision, however; they are properly addressed to the Executive and Congress.

<sup>20</sup> Prior federal involvement with endangered species had been quite limited. For example, the Lacey Act of 1900, 31 Stat. 187, partially codified in 16 U. S. C. §§ 667e and 701 (1976), and the Black Bass Act of 1926, 16 U. S. C. § 851 *et seq.* (1976), prohibited the transportation in

## 76-1701—OPINION

## TVA v. HILL

Dam will either eradicate the known population of snail darters or destroy their critical habitat. Petitioner does not now seriously dispute this fact.” In any event, under § 4 (a)(1) of the Act, 16 U. S. C. § 1533 (d), the Secretary of the Interior is vested with exclusive authority to determine whether a species such as the snail darter is “endangered” or “threatened” and to ascertain the factors which have led to such a precarious existence. By § 4 (d) Congress has authorized—indeed commanded—the Secretary to “issue such regulations as he deems necessary and advisable to provide for the conservation of such species.” 16 U. S. C. § 1533 (d). As we have seen, the Secretary promulgated regulations which declared the snail darter an endangered species whose critical habitat would be destroyed by creation of the Tellico Reservoir. Doubtless petitioner would prefer not to have these regulations on the books, but there is no suggestion that the Secretary exceeded his authority or abused his discretion in issuing the regulations. Indeed, no judicial review of the Secretary’s determinations has ever been sought and hence the validity of his actions are not open to review in this Court.

Starting from the above premise, two questions are presented: (a) would TVA be in violation of the Act if it completed and operated the Tellico Dam as planned?; (b) if TVA’s actions would offend the Act, is an injunction the appropriate remedy for the violation? For the reasons stated hereinafter, we hold that both questions must be answered in the affirmative.

## (A)

It may seem curious to some that the survival of a relatively small number of three-inch fish among all the countless millions of species extant would require the permanent halting of a virtually completed dam for which Congress has expended more than \$100 million. The paradox is not minimized by

---

<sup>17</sup> The District Court findings are to the same effect and are unchallenged here.

## 76-1701—OPINION

## TVA v. HILL

the fact that Congress continued to appropriate large sums of public money for the project, even after congressional appropriations committees were apprised of its apparent impact upon the survival of the snail darter. We conclude, however, that the explicit provisions of the Endangered Species Act require precisely that result.

One would be hard pressed to find a statutory provision whose terms were any plainer than those in § 7 of the Endangered Species Act. Its very words affirmatively command all federal agencies “to *insure* that actions *authorized, funded, or carried out* by them do not *jeopardize* the continued existence” of an endangered species or “*result in the destruction or modification of habitat of such species . . .*” 16 U. S. C. § 1536. (Emphasis added.) This language admits of no exception. Nonetheless, petitioner urges, as do the dissenters, that the Act cannot reasonably be interpreted as applying to a federal project which was well under way when Congress passed the Endangered Species Act of 1973. To sustain that position, however, we would be forced to ignore the ordinary meaning of plain language. It has not been shown, for example, how TVA can close the gates of the Tellico Dam without “*carrying out*” an action that has been “*authorized*” and “*funded*” by a federal agency. Nor can we understand how such action will “*insure*” that the snail darter’s habitat is not disrupted.<sup>18</sup> Accepting the Secretary’s determinations, as

---

<sup>18</sup> In dissent, Mr. JUSTICE POWELL argues that the meaning of “actions” in § 7 is “far from ‘plain,’” and that “it seems evident that the ‘actions’ referred to are not all actions that an agency can ever take, but rather actions that the agency is *deciding whether* to authorize, to fund, or to carry out.” *Post*, at 10. Aside from this bare assertion, however, no explanation is given to support the proffered interpretation. This recalls Lewis Carroll’s classic advice on the construction of language:

“When I use a word,” Humpty Dumpty said in a rather scornful tone, “it means just what I choose it to mean—neither more nor less.” Through the Looking Glass, in the Complete Works of Lewis Carroll, 196 (1939).

Aside from being unexplicated, the dissent’s reading of § 7 is flawed on

## 76-1701—OPINION

## TVA v. HILL

gave the Secretary power to identify "the names of the species of native fish and wildlife found to be threatened with extinction," § 1 (c), 80 Stat. 926, as well as authorization to purchase land for the conservation, protection, restoration, and propagation of "selected species" of "native fish and wildlife" threatened with extinction. § 2 (a)-(c), 80 Stat. 926-927 (1966). Declaring the preservation of endangered species a national policy, the 1966 Act directed all federal agencies both to protect these species and "*insofar as is practicable and consistent with the[ir] primary purposes*," § 1 (b), 80 Stat. 926 (1966), "preserve the habitats of such threatened species on lands under their jurisdiction." *Ibid.* (Emphasis added.) The 1966 statute was not a sweeping prohibition on the taking of endangered species, however, except on federal lands, § 4 (c), 80 Stat. 938 (1966), and even in those federal areas the Secretary was authorized to allow the hunting and fishing of endangered species. § 4 (d)(1), 80 Stat. 928 (1966).

In 1969 Congress enacted the Endangered Species Conservation Act, 83 Stat. 275 (1966), repealed 87 Stat. 903 (1973), which continued the provisions of the 1966 Act while at the same time broadening federal involvement in the preservation of endangered species. Under the 1969 legislation, the Secretary was empowered to list species "threatened with worldwide extinction," § 3 (a), 83 Stat. 275 (1969); in addition, the

---

interstate commerce of fish or wildlife taken in violation of national, state or foreign law. The effect of both of these statutes was constrained, however, by the fact that prior to passage of the Endangered Species Act of 1973, there were few laws regulating these creatures. See Coggins, *Conserving Wildlife Resources: An Overview of the Endangered Species Act of 1973*, 52 N. D. L. Rev. 315, 317-318 (1973). The Migratory Bird Treaty Act, passed in 1918, 16 U. S. C. § 703 *et seq.* (1976), was more extensive, giving the Secretary of the Interior power to adopt regulations for the protection of migratory birds. Other measures concentrated on establishing refuges for wildlife. See, *e. g.*, Land and Water Conservation Fund Act of 1965, 16 U. S. C. § 4601-4 *et seq.* See generally M. Bean, *The Evolution of National Wildlife Law* (1977).

## 76-1701—OPINION

## TVA v. HILL

importation of any species so recognized into the United States was prohibited. § 2, 83 Stat. 275 (1969). An indirect approach to the taking of endangered species was also adopted in the Conservation Act by way of a ban on the transportation and sale of wildlife taken in violation of any federal, state, or foreign law. Section 7 (a)–(b), 83 Stat. 279 (1966).<sup>21</sup>

Despite the fact that the 1966 and 1969 legislation represented “the most comprehensive of its type to be enacted by any nation”<sup>22</sup> up to that time, Congress was soon persuaded that a more expansive approach was needed if the newly declared national policy of preserving endangered species was to be realized. By 1973, when Congress held hearings on what would later become of the Endangered Species Act of 1973, it was informed that species were still being lost at the rate of about one per year, 1973 House Hearings, at 306 (statement of Stephen R. Seater, for Defenders of Wildlife), and “the pace of disappearance of species” appeared to be “accelerating.” H. R. Rep. No. 93-412, 93d Cong., 1st Sess., 4 (1973). Moreover, Congress was also told that the primary cause of this trend was something other than the normal process of natural selection:

“[M]an and his technology has [sic] continued at any ever-increasing rate to disrupt the natural ecosystem. This has resulted in a dramatic rise in the number and severity of the threats faced by the world’s wildlife. The truth in this is apparent when one realizes that half of the recorded extinctions of mammals over the past 2,000 years have occurred in the most recent 50-year period.”

---

<sup>21</sup> This approach to the problem of taking, of course, contained the same inherent limitations as the Lacey and Black Bass Acts, discussed, *supra*, at 19–20, n. 20.

<sup>22</sup> Hearings on Endangered Species before a Subcommittee of the House Committee on Merchant Marine and Fisheries, 93d Cong., 1st Sess., 202 (1973) (statement of Asst. Secy. of the Interior) (hereinafter cited as 1973 House Hearings).

## 76-1701—OPINION

## TVA v. HILL

1973 House Hearings, 202 (statement of Asst. Secy. of Interior).

That Congress did not view these developments lightly was stressed by one commentator:

"The dominant theme pervading all Congressional discussion of the proposed [Endangered Species Act of 1973] was the overriding need to *devote whatever effort and resources were necessary* to avoid further diminution of national and worldwide wildlife resources. Much of the testimony at the hearings and much debate was devoted to the biological problem of extinction. Senators and Congressmen uniformly deplored the irreplaceable loss to aesthetics, science, ecology, and the national heritage should more species disappear." Coggins, *Conserving Wildlife Resources: An Overview of the Endangered Species Act of 1973*, 51 N. D. L. Rev. 315, 321 (1974). (Emphasis added.)

The legislative proceedings in 1973 are, in fact, replete with expressions of concern over the risk that might lie in the loss of *any* endangered species.<sup>23</sup> Typifying these sentiments is

---

<sup>23</sup> See, e. g., 1973 House Hearings, at 280 (statement of Rep. Roe); *id.*, at 281 (statement of Rep. Whitehurst); *id.*, at 301 (statement of Friends of the Earth); *id.*, at 306-307 (statement of Defenders of Wildlife). One statement, made by the Assistant Secretary of the Department of the Interior, particularly deserves notice:

"[I] have watched in my lifetime a vast array of mollusks in southern streams totally disappear as a result of damming, channelization, and pollution. It is often asked of me, 'what is the importance of the mollusks for example in Alabama.' I do not know, and I do not know whether any of us will ever have the insight to know exactly why these mollusks evolved over millions of years or what their importance is in the total ecosystem. However, I have great trouble being party to their destruction without ever have gained such knowledge." *Id.*, at 207.

One member of the mollusk family existing in these southern rivers is the snail, see 12 Encyclopedia Britannica 326 (15th ed.), which ironically enough provides the principle food for snail darters. See *supra*, at 7, 10-11, n. 16.



## 76-1701—OPINION

## TVA v. HILL

the report of the House Committee on Merchant Marine and Fisheries on H. R. 37, a bill which contained the essential features of the subsequently enacted Act of 1973; in explaining the need for the legislation, the report stated:

"As we homogenize the habitats in which these plants and animals evolved, and as we increase the pressure for products that they are in a position to supply (usually unwillingly) we threaten their—and our own—genetic heritage.

*"The value of this genetic heritage is, quite literally, incalculable.*

"From the most narrow possible point of view, it is in the best interests of mankind to minimize the losses of genetic variations. The reason is simple: they are potential resources. They are keys to puzzles which we cannot solve, and may provide answers to questions which we have not yet learned to ask.

"To take a homely, but apt, example: one of the critical chemicals in the regulation of ovulations in humans was found in a common plant. Once discovered, and analyzed, humans could duplicate it synthetically, but had it never existed—or had it been driven out of existence before we knew its potentialities—we would never have tried to synthesize it in the first place.

"Who knows, or can say, what potential cures for cancer or other scourges, present or future, may lie locked up in the structures of plants which may yet be undiscovered, much less analyzed? . . . Sheer self-interest impels us to be cautious.

*"The institutionalization of that caution lies at the heart of H. R. 37 . . ."* H. R. Rep. No. 93-412, 93d Cong., 1st Sess., 4-5 (1973). (Emphasis added.)

As the examples cited here demonstrate, Congress was con-

## 76-1701—OPINION

## TVA v. HILL

cerned about the *unknown* uses that endangered species might have and about the *unforeseeable* place such creatures may have in the chain of life on this planet.

In shaping legislation to deal with the problem thus presented, Congress started from the finding that "[t]he two major causes of extinction are hunting and destruction of natural habitat." S. Rep. No. 93-307, 93d Cong., 1st Sess., 2 (1973). Of these twin threats, Congress was informed that the greatest was destruction of natural habitats; see House Hearings, at 236 (statement of Assoc. Dep. Chief for National Forest System, Department of Agriculture); *id.*, at 241 (statement of Director of Michigan Dept. of Natural Resources); *id.*, at 306 (statement of Stephen R. Seater, Defenders of Wildlife); Lachenmeier, The Endanger Species Act of 1973: Preservation or Pandemonium, 5 Environ. Law 29, 31 (1974). Witnesses recommended, among other things, that Congress require all land-managing agencies "to avoid damaging critical habitat for endangered species and to take positive steps to improve such habitat." House Hearings, at 241 (statement of Director of Mich. Dept. of Natural Resources). Virtually every bill introduced in Congress during the 1973 session responded to this concern by incorporating language similar, if not identical, to that found in the present § 7 of the Act.<sup>24</sup> These provisions were designed, in the words of an Administration witness, "for the first time [to] *prohibit* [a] federal agency from taking action which does jeopardize the status of an endangered species," Hearings on the Endangered Species Act of 1973 before a Subcommittee of the Senate Committee on Commerce, 93d Cong., 1st Sess., 68 (1973)

---

<sup>24</sup> For provisions in the House bills, see § 5 (d) of H. R.'s 37, 470, 471, 1511, 2669, 3696, and 3795; § 3 (d) of H. R.'s 1461 and 4755; § 5 (d) of H. R. 2735; § 3 (d) of H. R. 4758. For provisions in the Senate bills, see § 3 (d) of S. 1592; § 5 (d) of S. 1983. The House bills are collected in the 1973 House Hearings, at 87-185; the Senate bills are found in the Hearings on the Endangered Species Act of 1973 before a Subcommittee of the Senate Committee on Commerce, 93d Cong., 1st Sess., at 3-49 (1973).

## 76-1701—OPINION

## TVA v. HILL

(statement of Dep. Asst. Secy. of the Interior) (emphasis added); furthermore, the proposed bills would "*direct* all . . . Federal agencies to utilize their authorities for carrying out programs *for the protection* of endangered species." House Hearings, at 205 (statement of Asst. Secy. of the Interior). (Emphasis added.)

As it was finally passed, the Endangered Species Act of 1973 represented the most comprehensive legislation for the preservation of endangered species ever enacted by any nation. Its stated purposes were "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved," and "to provide a program for the conservation of such . . . species . . . ." 16 U. S. C. § 1531 (b). In furtherance of these goals, Congress expressly stated in § 2 (c) that "all Federal departments and agencies *shall seek to conserve endangered species* and threatened species . . . ." *Id.*, § 1532 (c). (Emphasis added.) Lest there be any ambiguity as to the meaning of this statutory directive, the Act specifically defined "conserve" as meaning "to use and the use of *all methods and procedures which are necessary* to bring *any endangered species* to the point at which the measures provided pursuant to this Act are no longer necessary." *Id.*, § 1532 (2). (Emphasis added.) Aside from § 7, other provisions indicated the seriousness with which Congress viewed this issue: virtually all dealings with endangered species, including taking, possession, transportation and sale, were prohibited, *id.*, § 1538, except in extremely narrow circumstances, see *id.*, § 1539 (b). The Secretary was also given extensive powers to develop regulations and programs for the preservation of endangered and threatened species.<sup>25</sup> *Id.*, § 1533 (d).

---

<sup>25</sup> A further indication of the comprehensive scope of the 1973 Act lies in Congress' inclusion of "threatened species" as a class deserving federal protection. Threatened species are defined as those which are "likely to become an endangered species within the foreseeable future throughout all or a significant portion of [their] range." 16 U. S. C. § 1532 (14).

## 76-1701—OPINION

## TVA v. HILL

Citizen involvement was encouraged by the Act, with provisions allowing interested persons to petition the Secretary to list a species as endangered or threatened, *id.*, § 1533 (c)(2), and bring civil suits in United States District Courts to force compliance with any provision of the Act, *id.*, §§ 1540 (c) and (g).

Section 7 of the Act, which of course is relied upon by respondents in this case, provides a particularly good gauge of congressional intent. As we have seen, this provision had its genesis in the Endangered Species Act of 1966, but that legislation qualified the obligation of federal agencies by stating that they should seek to preserve endangered species only "*insofar as is practicable and consistent with the[ir] primary purposes . . .*" Likewise, every bill introduced in 1973 contained a qualification similar to that found in the earlier statutes.<sup>26</sup> Exemplary of these was the Administration Bill, H. R. 4758, which in § 2 (b) would direct federal agencies to use their authorities to further the ends of the Act "*insofar as is practicable and consistent with the[ir] primary purposes . . .*" (Emphasis added.) Explaining the idea behind this language, an Administration spokesman told Congress that it "would signal to . . . all agencies of the Government that this is the *first priority, consistent with their primary objectives.*" 1973 House Hearings, at 213 (statement of Dep. Asst. Secy. of the Interior). (Emphasis added.) This type of language did not go unnoticed by those advocating strong endangered species legislation. A representative of the Sierra Club, for example, attacked the use of the phrase "consistent with the primary purpose" in proposed H. R. 4758, cautioning that the qualification "could be construed to be a declaration of congressional policy that other agency purposes are neces-

<sup>26</sup> For provisions in the House bills, see §§ 2 (c) and 5 (d) of H. R.'s 37, 470, 471, 1511, 2669, 3310, 3696, and 3795; § 3 (d) of H. R.'s 1461 and 4755; § 5 (d) of H. R. 2735; § 2 (b) of H. R. 4758; one other House bill, H. R. 2169, imposed no requirements on federal agencies. For provisions in the Senate bills, see § 2 (b) of S. 1592; §§ 2 (b), and 5 (d) of S. 1983.

## 76-1701—OPINION

## TVA v. HILL

sarily more important than protection of endangered species and would always prevail if conflict were to occur." 1973 House Hearings, at 335 (statement of the Chairman of the Sierra Club's National Wildlife Committee); see *id.*, at 251 (statement for the National Audubon Society).

What is very significant in this sequence is that the final version of the 1973 Act carefully omitted all of the reservations described above. In the bill which the Senate initially approved (S. 1983), however, the version of the current § 7 merely required federal agencies to "carry out such programs *as are practicable* for the protection of species listed . . . ." S. 1983, § 7 (a). (Emphasis added.) By way of contrast, the bill that originally passed the House, H. R. 37, contained a provision which was essentially a mirror image of the subsequently passed § 7—indeed all phrases which might have qualified an agency's responsibilities had been omitted from the bill.<sup>28</sup> In explaining the expected impact of this provision in H. R. 37 on federal agencies, the House Committee's Report states:

"This subsection *requires* the Secretary and the heads of all other Federal departments and agencies to use their authorities in order to carry out programs for the protection of endangered species, and it further *requires* that those agencies take *the necessary action* that will *not jeopardize* the continuing existence of endangered species or result in the destruction of critical habitat of those species." H. R. Rep. No. 93-412, 93d Cong., 1st Sess., 14 (1973). (Emphasis added.)

<sup>27</sup> We note, however, that in the version of S. 1983 which was sent to the floor of the Senate by the Senate Committee on Commerce, the qualifying language "wherever practicable" had been omitted from one part of the bill, that being § 2 (b). See, 119 Cong. Rec. 25663. Section 2 (b) was the portion of S. 1983 that stated the "Findings and Policy" of Congress. But the Committee's version of S. 1983—which was reported to the full Senate—retained the limitation on § 7 that we note here. *Id.*, at 25664.

<sup>28</sup> See 119 Cong. Rec. 30157-30162.

## 76-1701—OPINION

## TVA v. HILL

Resolution of this difference in statutory language, as well as other variations between the House and Senate bills, was the task of a Conference Committee. See 119 Cong. Rec. 30174-30175; 119 Cong. Rec. 31183. The Conference Report, No. 97-740, 93d Cong., 1st Sess. (1973), basically adopted the Senate bill, S. 1983; but the Conferees rejected the Senate version of § 7 and adopted the stringent, mandatory language in H. R. 37. While the Conference Report made no specific reference to this choice of provisions, the House Manager of the bill, Representative Dingell, provided an interpretation of what the Conference bill would require, making it clear that the mandatory provisions of § 7 were not casually nor inadvertently included:

"[Section 7] substantially amplifie[s] the obligation of [federal agencies] to take steps within their power to carry out the purposes of this act. A recent article . . . illustrates the problem which might occur absent the new language in the bill. It appears that the whooping cranes of this country, perhaps the best known of our endangered species, are being threatened by Air Force Bombing activities along the gulf coast of Texas. Under existing law, the Secretary of Defense has some discretion as to whether or not he will take the necessary action to see that this threat disappears . . . . [O]nce the bill is enacted, [the Secretary of Defense] *would be required to take the proper steps.*

"Another example [has] to do with the continental population of grizzly bears which may or may not be endangered, but which is surely threatened . . . . Once this bill is enacted, the appropriate Secretary, whether of Interior, Agriculture or whatever, *will have to take action* to see that this situation is not permitted to worsen, and that these bears are not driven to extinction. The purposes of the bill included the conservation of the species

## 76-1701—OPINION

## TVA v. HILL

and of the ecosystems upon which they depend, and every agency of government is committed to see that their purposes are carried out. . . . [T]he agencies of Government can no longer plead that they can do nothing about it. *They can, and they must. The law is clear.*" 119 Cong. Rec. 42913. (Emphasis added.)

It is against this legislative background<sup>29</sup> that we must measure TVA's claim that the Act was not intended to stop operation of a project which, like Tellico Dam, was near completion when an endangered species was discovered in its path. While there is no discussion in the legislative history of precisely this problem, the totality of congressional action makes it abundantly clear that the result we reach today is wholly in accord with both the words of the statute and the intent of Congress. The plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost. This is reflected not only in the stated policies of the Act, but in literally every section of the statute. All persons, including federal agencies, are specifically instructed not to "take" endangered species, meaning that no one is "to harass, harm,<sup>30</sup> pursue, hunt, shoot,

---

<sup>29</sup> When confronted with a statute which is plain and unambiguous on its face, we ordinarily do not look to legislative history as a guide to its meaning. *Ex parte Collett*, 337 U. S. 55, 61 (1949), and cases cited therein. Here it is not necessary to look beyond the words of the statute. We have undertaken such an analysis only to meet Mr. JUSTICE POWELL's suggestion that the "absurd" result reached in this case, *post*, at 1, is not in accord with congressional intent.

<sup>30</sup> We do not understand how TVA intends to operate Tellico Dam without "harming" the snail darter. The Secretary of the Interior has defined the term "harm" to mean "an act or omission which actually injures or kills wildlife, including acts which annoy it to such an extent as to significantly disrupt essential behavioral patterns, which include, but are not limited to, breeding, feeding or sheltering; significant environmental modification or degradation which has such effects is included within the meaning of 'harm.'" 50 CFR § 17.3 (1975). (Emphasis added); see S. Rep. No. 307, 93d Cong. 1st Sess., 7 (1973).

## 76-1701—OPINION

## TVA v. HILL

wound, kill, trap, capture, or collect" such life forms. 16 U. S. C. §§ 1532 (14), 1538 (a)(1)(B). Agencies in particular are directed by §§ 2 (c) and 3 (2) of the Act to "use *all methods* and procedures which are necessary" to preserve endangered species. *Id.*, §§ 1531 (c), 1532 (2) (emphasis added). In addition, the legislative history undergirding § 7 reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species. The pointed omission of the type of qualifying language previously included in endangered species legislation reveals a conscious decision by Congress to give endangered species priority over the "primary missions" of federal agencies.

It is not for us to speculate, much less act, on whether Congress would have altered its stance had the specific events of this case been anticipated. In any event, we discern no hint in the deliberations of Congress relating to the 1973 Act that would compel a different result than we reach here.<sup>31</sup>

---

<sup>31</sup> The *only* portion of the legislative history which petitioner cites as being favorable to its position consists of certain statements made by Senator Tunney on the floor of the Senate during debates on S. 1983; see 119 Cong. Rec. 25691-25692. Senator Tunney was asked whether the proposed bill would affect the Army Corps of Engineers' decision to build a road through a particular area of Kentucky. Responding to this question, Senator Tunney opined that § 7 of S. 1983 would require consultation among the agencies involved, but that the Corps of Engineers "would not be prohibited from building such a road if they deemed it necessary to do so." *Id.*, at 25689. Petitioner interprets these remarks to mean that an agency, after balancing the respective interests involved, could decide to take action which would extirpate an endangered species. If that is what Senator Tunney meant, his views are in distinct contrast to every other expression in the legislative history as to the meaning of § 7. For example, when the Kentucky example was brought up in the Senate hearings, an Administration spokesman interpreted an analogous provision in S. 1592 as "prohibit[ing] [a] federal agency from taking action which does jeopardize the status of endangered species." *Supra*, at 24. Moreover, we note that the version of S. 1983 being discussed by Senator Tunney



## 76-1701—OPINION

## TVA v. HILL

Indeed, the repeated expressions of congressional concern over what it saw as the potentially enormous danger presented by the eradication of *any* endangered species suggests how the balance would have been struck had the issue been presented to Congress in 1973.

Furthermore, it is clear Congress foresaw that § 7 would, on occasion, require agencies to alter ongoing projects in order to fulfill the goals of the Act.<sup>32</sup> Congressman Dingell's discussion of Air Force practice bombing, for instance, obviously pinpoints a particular activity—intimately related to the national defense—which a major federal department would be obliged to alter in deference to the strictures of § 7. A similar example is provided by the House Committee Report:

“Under the authority of [Section 7], the Director of the Park Service would be required *to conform the practices of his agency* to the need for protecting the rapidly

---

contained the “as practicable” limitation in § 7 (a) which we have previously mentioned. See *supra*, at 27. Senator Tunney's remarks perhaps explain why the Conference Committee subsequently deleted all such qualifying expressions. We construe the Senator's remarks as simply meaning that under the 1973 Act the agency responsible for the project would have the “final decision,” 119 Cong. Rec. 25690, as to whether the action should proceed, notwithstanding contrary advice from the Secretary of the Interior. The Secretary's recourse would be to either appeal to higher authority in the Administration, or proceed to federal court under the relevant provisions of the Act; citizens may likewise seek enforcement under 16 U. S. C. § 1549 (g), as has been done in this case.

<sup>32</sup> MR. JUSTICE POWELL characterizes the result reached here as giving “retroactive” effect to the Endangered Species Act of 1973. We cannot accept that contention. Our holding merely gives effect to the plain words of the statute, namely that § 7 affects all projects which remain to be authorized, funded, or carried out. Indeed, under the Act there could be no “retroactive” application since, by definition, any *prior* action of a federal agency which *would* have come under the scope of the Act must have already *resulted* in the destruction of an endangered species or its critical habitat. In that circumstance the species would have already been extirpated or its habitat destroyed; the Act would then have no subject matter to which it might apply.

## 76-1701—OPINION

## TVA v. HILL

dwindling stock of grizzly bears within Yellowstone Park. These bears, which may be endangered, and are undeniably threatened, should at least be protected by supplying them with carcasses from the excess elk within the park, *by curtailing the destruction of habitat by clearcutting National Forests surrounding the Park*, and by preventing hunting until their numbers have recovered sufficiently to withstand these pressures. H. R. Rep. No. 93-412, 93d Cong., 1st Sess., 14 (1973). (Emphasis added.)

One might dispute the applicability of these examples to the Tellico Dam by saying that in this case the burden on the public through the loss of millions of unrecoverable dollars would greatly outweigh the loss of the snail darter.<sup>33</sup> But neither the Endangered Species Act nor Art. III of the Constitution provides federal courts with authority to make such fine utilitarian calculations. On the contrary, the plain language of the Act, buttressed by its legislative history, shows clearly that Congress viewed the value of endangered species as "incalculable." Quite obviously, it would be difficult for a court to balance the loss of a sum certain—even \$100 million—against a congressionally declared "incalculable" value, even assuming we had the power to engage in such a weighing process, which we emphatically do not.

In passing the Endangered Species Act of 1973, Congress was also aware of certain instances in which exceptions to the statute's broad sweep would be necessary. Thus, § 10, 16

---

<sup>33</sup> MR. JUSTICE POWELL's dissent places great reliance on *Church of the Holy Trinity v. United States*, 143 U. S. 457, 459 (1892), *post*, at 9-10, to support his view of the 1973 Act's legislative history. This Court, however, later explained *Holy Trinity* as applying only in "rare and exceptional circumstances . . . . And there must be something to make plain the intent of Congress that the letter of the statute is not to prevail." *Crooks v. Harrelson*, 282 U. S. 55, 60 (1930). As we have seen from our explication of the structure and history of the 1973 Act, there is nothing to support the assertion that the literal meaning of § 7 should not apply in this case.

## 70-1701—OPINION

## TVA v. HILL

U. S. C. § 1539, creates a number of limited "hardship exemptions," none of which would even remotely apply to the Tellico Project. In fact, there are no exemptions in the Endangered Species Act for federal agencies, meaning that under the maxim *expressio unius est exclusio alterius*, we must presume that these were the only "hardship cases" Congress intended to exempt. Cf. *National Railroad Passenger Corp. v. National Assoc. Railroad Passengers*, 414 U. S. 453, 458 (1974).<sup>34</sup>

Notwithstanding Congress' expression of intent in 1973, we are urged to find that the continuing appropriations for Tellico Dam constitute an implied repeal of the 1973 Act, at least insofar as it applies to the Tellico Project. In support of this view, TVA points to the statements found in various House and Senate appropriations committees' reports; as

---

<sup>34</sup> MR. JUSTICE POWELL's dissent relies on cases decided under the National Environmental Policy Act to support its position that the 1973 Act should only apply to prospective actions of an agency. *Post*, at 11. The NEPA decisions, however, are completely inapposite. First, the two statutes serve different purposes. NEPA essentially imposes a procedural requirement on agencies, requiring them to engage in an extensive *inquiry* as to the effect of federal actions on the environment; by way of contrast, the Act is substantive in effect, designed to *prevent* the loss of any endangered species, regardless of the cost. Thus, it would make sense to hold NEPA inapplicable at some point in the life of a project, because the agency would no longer have a meaningful opportunity to *weigh* the benefits of the project versus the detrimental effects on the environment. Section 7, on the other hand, compels agencies to not only *consider* the effect of their projects on endangered species, but to take such actions as are necessary to *insure* that species are not extirpated as a result of federal activities. Second, even the NEPA cases have generally required agencies to file environmental impact statements when the remaining governmental action would be environmentally "significant." See, e. g., *Environmental Defense Fund v. TVA*, 468 F. 2d 1164, 1177 (CA6 1972). Under § 7, the loss of *any* endangered species has been determined by Congress to be environmentally "significant." See *supra*, at 22-24.

## 76-1701—OPINION

## TVA v. HILL

described in Part I, *supra*, those reports generally reflected the attitude of the *committees* either that the Act did not apply to Tellico or that the dam should be completed regardless of the provisions of the Act. Since we are unwilling to assume that these latter committee statements constituted advice to ignore the provisions of a duly enacted law, we assume that these committees believed that the Act simply was not applicable in this situation. But even under this interpretation of the committees' actions, we are unable to conclude that the Act has been in any respect amended or repealed.

There is nothing in the appropriations measures, as passed, which state that the Tellico Project was to be completed irrespective of the requirements of the Endangered Species Act. These appropriations, in fact, represented relatively minor components of the lump sum amounts for the *entire* TVA budget.<sup>35</sup> To find a repeal of the Endangered Species Act under these circumstances would surely do violence to the "cardinal rule . . . that repeals by implication are not favored." *Morton v. Mancari*, 417 U. S. 535, 549 (1974), quoting *Posadas v. National City Bank*, 296 U. S. 497, 503 (1936). In *Posadas* this Court held, in no uncertain terms, that "the intention of the legislature to repeal must be clear and manifest." *Ibid.* See *Georgia v. Pennsylvania R. Co.*, 324 U. S. 439, 456-457 (1945) ("Only a clear repugnancy between the old and the new [law] results in the former giving away . . ."); *United States v. Borden Co.*, 308 U. S. 188, 198-199 (1939) ("Intention of the legislature to repeal must be clear and manifest . . . . A positive repugnancy [between the old and the new laws]"); *Wood v. United*

---

<sup>35</sup> The appropriations Acts did not themselves identify the projects for which the sums had been appropriated; identification of these projects requires reference to the legislative history. See *supra*, at 9 n. 14. Thus, unless a Member scrutinized in detail the committee proceedings concerning the appropriations, he or she would have no knowledge of the possible conflict between the continued funding and the Endangered Species Act.

## 76-1701—OPINION

## TVA v. HILL

*States*, 41 U. S. 343, 363 (1842) (“[T]here must be a positive repugnancy . . .”). In practical terms, this “cardinal rule” means that “in the absence of some affirmative showing of an intention to repeal, the only permissible justification for a repeal by implication is when the earlier and later statutes are irreconcilable.” *Mancari*, *supra*, at 551.

The doctrine disfavoring repeals by implication “applies with full vigor when . . . the subsequent legislation is an appropriations measure.” *Committee for Nuclear Responsibility v. Seaborg*, 149 U. S. App. D. C. 380, 382, 463 F. 2d 783, 785 (1971) (emphasis added); *Environmental Defense Fund v. Froehlke*, 473 F. 2d 346, 355 (CA8 1972). This is perhaps an understatement since it would be more accurate to say that the policy applies with even *greater* force when the claimed repeal rests solely on an appropriations act. We recognize that both substantive enactments and appropriations measures are “acts of Congress,” but the latter have the limited and specific purpose of providing funds for authorized programs. When voting on appropriations measures, legislators are entitled to operate under the assumption that the funds will be devoted to purposes which are lawful and not for any purpose forbidden. Without such an assurance, every appropriations measure would be pregnant with prospects of altering substantive legislation, repealing by implication any prior statute which might prohibit the expenditure. Not only would this lead to the absurd result of requiring Members to review exhaustively the background of every authorization before voting on an appropriation, but it would flout the very rules the Congress carefully adopted to avoid this need. House Rule XXI (2), for instance, specifically provides:

“No appropriation shall be reported in any general appropriation bill, or be in order as an amendment thereto, for any expenditure not previously authorized by law, unless in continuation of appropriations for such public works

## 76-1701—OPINION

## TVA v. HILL

as are already in progress. *Nor shall any provision in any such bill or amendment thereto changing existing law be in order.*" (Emphasis added.)

See also Standing Rules of the Senate, Rule 16.4. Thus, to sustain petitioner's position, we would be obliged to assume that Congress meant to *pro tanto* repeal § 7 of the Act by means of a procedure expressly prohibited under the rules of Congress.

Perhaps mindful of the fact that it is "swimming upstream" against a strong current of well-established precedent, TVA argues for an exception to the rule against implied repealers in a circumstance where, as here, appropriations committees have expressly stated their "understanding" that the earlier legislation would not prohibit the proposed expenditure. We cannot accept such a proposition. Expressions of committees dealing with requests for appropriations cannot be equated with statutes enacted by Congress, particularly not in the circumstances presented by this case. First, the appropriations committees had no jurisdiction over the subject of endangered species, much less did they conduct the type of extensive hearings which preceded passage of the earlier endangered species acts, especially the 1973 Act. We venture to suggest that the House Committee on Merchant Marine and Fisheries and the Senate Committee on Commerce would be somewhat surprised to learn that their careful work on the substantive legislation had been undone by the simple—and brief—insertion of some inconsistent language in appropriations committees' reports.

Second, there is no indication that Congress as a whole was aware of TVA's position, although the appropriations committees apparently agreed with petitioner's views. Only recently, in *SEC v. Sloan*, — U. S. — (1978), we declined to presume general congressional acquiescence in a 34-year-old practice of the SEC, despite the fact that the Senate committee *having jurisdiction over the Commission's activities* had long expressed

## 76-1701—OPINION

## TVA v. HILL

approval of the practice. MR. JUSTICE REHNQUIST, speaking for the Court, observed that we should be "extremely hesitant to presume general congressional awareness of the Commission's construction based only upon a few isolated statements in the thousands of pages of legislative documents." *Id.*, at —. *A fortiori*, we should not assume that petitioner's views—and the appropriations committees' acceptance of them—were any better known, especially when the TVA is not the agency with primary responsibility for administering the Endangered Species Act.

Quite apart from the foregoing factors, we would still be unable to find that in this case "the earlier and later statutes are irreconcilable," *Mancari, supra*, at 551; here it is entirely possible "to regard each as effective." *Id.*, at 551. The starting point in this analysis must be the legislative proceedings leading to the 1977 appropriations since the earlier funding of the dam occurred prior to the listing of the snail darter as an endangered species. In all successive years, TVA confidently reported to the appropriations committees that efforts to transplant the snail darter appeared to be successful; this surely gave those committees some basis for the impression that there was no direct conflict between the Tellico Project and the Endangered Species Act. Indeed, the special appropriation for 1978 of \$2 million for transplantation of endangered species supports the view that the committees saw such relocation as the means whereby collision between Tellico and the Endangered Species Act could be avoided. It should also be noted that the reports issued by the Senate and House Appropriations Committees in 1976 came within a month of the District Court's decision in this case, which hardly could have given the Members cause for concern over the possible applicability of the Act. This leaves only the 1978 appropriations, the reports for which issued after the Court of Appeals' decision now before us. At that point very little remained to be accomplished on the project; the committees understandably advised TVA to cooperate with the Department of the

## 76-1701—OPINION

## TVA v. HILL

Interior "to relocate the endangered species to another suitable habitat so as to permit the project to proceed as rapidly as possible." H. R. Rep. No. 95-379, 95th Cong., 1st Sess., at 11. It is true that the *committees* repeated their earlier expressed "view" that the Act did not prevent completion of the Tellico Project. Considering these statements in context, however, it is evident that they "represent only the personal views of these legislators," and "however explicit, cannot serve to change the legislative intent of Congress expressed before the Act's passage." *Regional Rail Reorganization Cases*, 419 U. S. 102, 132 (1974).

## (B)

Having determined that there is an irreconcilable conflict between operation of the Tellico Dam and the explicit provisions of § 7 of the Endangered Species Act, we must now consider what remedy, if any, is appropriate. It is correct, of course, that a federal judge sitting as a chancellor is not mechanically obligated to grant an injunction for every violation of law. This Court made plain in *Hecht Co. v. Bowles*, 321 U. S. 321, 329 (1944), that "[a] grant of *jurisdiction* to issue compliance orders hardly suggests an absolute duty to do so under any and all circumstances." As a general matter it may be said that "[s]ince all or almost all equitable remedies are discretionary, the balancing of equities and hardships is appropriate in almost any case as a guide to the chancellor's discretion." Dobbs, *Remedies* 52 (1973). Thus, in *Hecht* the Court refused to grant an injunction when it appeared from the District Court findings that "the issuance of an injunction would have 'no effect by way of insuring better compliance in the future' and would [have been] 'unjust' to [the] petitioner and not 'in the public interest.'" 321 U. S., at 326.

But these principles take a court only so far. Our system of government is, after all, a tripartite one, with each Branch having certain defined functions delegated to it by the Consti-



## 76-1701—OPINION

## TVA v. HILL

tution. While "[it] is emphatically the province and duty of the judicial department to say what the law is," *Marbury v. Madison*, 5 U. S. 137, 177 (1803), it is equally—and emphatically—the exclusive province of the Congress not only to formulate legislative policies, mandate programs and projects, but also to establish their relative priority for the Nation. Once Congress, exercising its delegated powers, has decided the order of priorities in a given area, it is for the Executive to administer the laws and for the courts to enforce them when enforcement is sought.

Here we are urged to view the Endangered Species Act "reasonably," and hence shape a remedy "that accords with some modicum of commonsense and the public weal." *Post*, at 2. But is that our function? We have no expert knowledge on the subject of endangered species, much less do we have a mandate from the people to strike a balance of equities on the side of the Tellico Dam. Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities, thereby adopting a policy which it described as "institutionalized caution."

Our individual appraisal of the wisdom or unwisdom of a particular course consciously selected by the Congress is to be put aside in the process of interpreting a statute. Once the meaning of an enactment is discerned and its constitutionality determined, the judicial process comes to an end. We do not sit as a committee of review, nor are we vested with the power of veto. The lines ascribed to Sir Thomas More by Robert Bolt are not without relevance here:

"The law, Roper, the law. I know what's legal, not what's right. And I'll stick to what's legal . . . . I'm *not* God. The currents and eddies of right and wrong, which you find such plain-sailing, I can't navigate, I'm no voyager. But in the thickets of the law, oh there I'm a forester. . . . What would you do? Cut a great road through the law

## 76-1701—OPINION

## TVA v. HILL

to get after the Devil? . . . And when the last law was down, and the Devil turned round on you—where would you hide, Roper, the laws all being flat? This country's planted thick with laws from coast to coast—Man's laws, not God's—and if you cut them down . . . d'you really think you could stand upright in the winds that would blow then? Yes, I'd give the Devil benefit of law, for my own safety's sake." Bolt, *A Man for All Seasons*, Act I, at 147 (Heinemann ed. 1967).

We agree with the Court of Appeals that in our constitutional system the commitment to the separation of powers is too fundamental for us to pre-empt congressional action by judicially decreeing what accords with "commonsense and the public weal." Our Constitution vests such responsibilities in the political Branches.

*Affirmed.*

# SUPREME COURT OF THE UNITED STATES

No. 76-1701

|  |   |  |
|--|---|--|
| Tennessee Valley Authority,<br>Petitioner,<br>v.<br>Hiram G. Hill, Jr., et al. | } | On Writ of Certiorari to the<br>United States Court of Ap-<br>peals for the Sixth Circuit. |
|--|---|--|

[June 15, 1978]

MR. JUSTICE POWELL, with whom MR. JUSTICE BLACKMUN joins, dissenting.

The Court today holds that § 7 of the Endangered Species Act requires a federal court, for the purpose of protecting an endangered species or its habitat, to enjoin permanently the operation of any federal project, whether completed or substantially completed. This decision casts a long shadow over the operation of even the most important projects, serving vital needs of society and national defense, whenever it is determined that continued operation would threaten extinction of an endangered species or its habitat. This result is said to be required by the "plain intent of Congress" as well as by the language of the statute.

In my view § 7 cannot reasonably be interpreted as applying to a project that is completed or substantially completed<sup>1</sup> when its threat to an endangered species is discovered. Nor can I believe that Congress could have intended this Act to produce the "absurd result"—in the words of the District Court—of this case. If it were clear from the language of the Act and its legislative history that Congress intended to authorize this result, this Court would be compelled to enforce

---

<sup>1</sup> Attorney General Bell advised us at oral argument that the dam had been completed, that all that remains is to "close the gate," and to complete the construction of "some roads and bridges." The "dam itself is finished. All the landscaping has been done. . . . It is completed." Tr. of Oral Arg. 18.

## 76-1701—DISSENT

## TVA v. HILL

it. It is not our province to rectify policy or political judgments by the Legislative Branch, however egregiously they may disserve the public interest. But where the statutory language and legislative history, as in this case, need not be construed to reach such a result, I view it as the duty of this Court to adopt a permissible construction that accords with some modicum of commonsense and the public weal.

## I

Although the Court has stated the facts fully, and fairly presented the testimony and action of the Appropriations Committees relevant to this case, I now repeat some of what has been said. I do so because I read the total record as compelling rejection of the Court's conclusion that Congress *intended* the Endangered Species Act to apply to completed or substantially completed projects such as the dam and reservoir project that today's opinion brings to an end—absent relief by Congress itself.

In 1966, Congress authorized and appropriated initial funds for the construction by the Tennessee Valley Authority (TVA) of the Tellico Dam and Reservoir Project on the Little Tennessee River in eastern Tennessee. The project is a comprehensive water resource and regional development project designed to control flooding, provide water supply, promote industrial and recreational development, generate some additional electric power within the TVA system, and generally improve economic conditions in an economically depressed area "characterized by under-utilization of human resources and outmigration of young people."<sup>2</sup>

Construction began in 1967, and Congress has voted funds for the project in every year since. In August 1973, when

---

<sup>2</sup> Hearings on Public Works for Water and Power Development and Energy Research Appropriation Bill, 1977, before a Subcommittee of the House Committee on Appropriations, 94th Cong., 2d Sess., Part 5, 261 (1976).

## 76-1701—DISSENT

TVA *v.* HILL

the Tellico Project was half completed, a new species of fish known as the snail darter<sup>3</sup> was discovered in the portion of the Little Tennessee River that would be impounded behind Tellico Dam. The Endangered Species Act was passed the following December. 87 Stat. 884 (1973), 16 U. S. C. (Supp. V) § 1531 *et seq.* More than a year later in January 1975, respondents joined others in petitioning the Secretary of the Interior to list the snail darter as an endangered species. On November 10, 1975, when the Tellico Project was 75% completed, the Secretary placed the snail darter on the endangered list and concluded that the "proposed impoundment of water behind the proposed Tellico Dam would result in total destruction of the snail darter's habitat." 40 Fed. Reg. 47506 (1975). In respondents' view, the Secretary's action meant that completion of the Tellico Project would violate § 7 of the Act, 16 U. S. C. § 1536 (Supp. V):

"All . . . Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species listed pursuant to section 1533 of this title and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary . . . to be critical."

---

<sup>3</sup> Although the snail darter is a distinct species, it is hardly an extraordinary one. Even ichthyologists familiar with the snail darter have difficulty distinguishing it from several related species. R. 107, 131. Moreover, new species of darters are discovered in Tennessee at the rate of about one a year; 8 to 10 have been discovered in the last five years. *Id.*, at 131. All told, there are some 130 species of darters, 85 to 90 of which are found in Tennessee, 40 to 45 in the Tennessee River system, and 11 in the Little Tennessee itself. *Id.*, at 33 n. 7, 130-131.

## 76-1701—DISSENT

## TVA v. HILL

TVA nevertheless determined to continue with the Tellico Project in accordance with the prior authorization by Congress. In February 1976, respondents filed the instant suit to enjoin its completion. By that time the Project was 80% completed.

In March 1976, TVA informed the House and Senate Appropriations Committees about the Project's threat to the snail darter and about respondents' lawsuit. Both committees were advised that TVA was attempting to preserve the fish by relocating them to the Hiwassee River, which closely resembles the Little Tennessee. It stated explicitly, however, that the success of those efforts could not be guaranteed.<sup>4</sup>

In a decision of May 25, 1976, the District Court for the Eastern District of Tennessee held that "the Act should not be construed as preventing completion of the project."<sup>5</sup> 419

---

<sup>4</sup> Hearings on Public Works for Water and Power Development and Energy Research Appropriations Bill, 1977, before a Subcommittee of the House Committee on Appropriations, 94th Cong., 2d Sess., Part 5, 261-262 (1976); Hearings on Public Works for Water and Power Development and Energy Research Appropriation Bill, 1977, before a Subcommittee of the Senate Committee on Appropriations, 94th Cong., 2d Sess., Part 4, 3096-3099 (1976).

<sup>5</sup> The Court of Appeals interpreted the District Court opinion as holding that TVA's continuation of the Tellico Project would violate the Act, but that the requested injunction should be denied on equitable grounds. 549 F. 2d 1064, 1069-1070 (CA6 1977). This interpretation of the District Court opinion appears untenable in light of that opinion's conclusion that the Act could "not be construed as preventing completion of the project," 419 F. Supp. 753, 755 n. 2 (ED Tenn. 1976) (emphasis added). Moreover, the District Court stated the issue in the case as whether "it is reasonable to conclude that Congress intended the Act to halt the Tellico Project at its present stage of completion." *Id.*, at 760. It concluded that the "Act should be construed in a reasonable manner to effectuate the legislative purpose," *ibid.*, and "that the Act does not operate in such a manner as to halt completion of this particular project," *id.*, at 763. From all this, together with the District Court's reliance on cases interpreting the National Environmental Policy Act, 42 U. S. C. § 4331 *et seq.*, as inapplicable to substantially completed projects, see *id.*,

## 76-1701—DISSENT

## TVA v. HILL

F. Supp. 753, 755 n. 2 (1976). An opposite construction, said the District Court, would be unreasonable:

"At some point in time a federal project becomes so near completion that a court of equity should not apply a statute enacted long after inception of the project to produce an unreasonable result. *Arlington Coalition on Transportation v. Volpe*, 458 F. 2d 1323, 1331-32 (4th Cir.), cert. den. 409 U. S. 1000, 93 S. Ct. 312, 34 L. Ed. 2d 261 (1972). Where there has been an irreversible and irretrievable commitment of resources by Congress to a project over a span of almost a decade, the Court should proceed with great circumspection." *Id.*, at 760.

Observing that respondents' argument, carried to its logical extreme, would require a court to enjoin the impoundment of water behind a fully completed dam if an endangered species were discovered in the river on the day before the scheduled impoundment, the District Court concluded that Congress could not have intended such a result.<sup>6</sup> Accordingly, it denied the prayer for an injunction and dismissed the action.

In 1975, 1976, and 1977 Congress, with full knowledge of the Tellico Project's effect on the snail darter and the alleged violation of the Endangered Species Act, continued to appropriate money for the completion of the Project. In doing so, the Appropriations Committees expressly stated that the Act did not prohibit the Project's completion, a view that Congress presumably accepted in approving the appropriations each year. For example, in June 1976, the Senate Committee on Appropriations released a report noting the

---

at 760-761, it seems clear that District Judge Taylor correctly interpreted § 7 as inapplicable to the Tellico Project.

<sup>6</sup> The District Court found that \$53 million out of more than \$78 million then expended on the Project would be unrecoverable if completion of the dam were enjoined. 419 F. Supp., at 760. As more than \$110 million has now been spent on the Project, it seems probable that abandonment of the dam would entail an even greater waste of tax dollars.

## 76-1701—DISSENT

## TVA v. HILL

District Court decision and recommending approval of TVA's full budget request for the Tellico Project. The Committee observed further that it did "not view the Endangered Species Act as prohibiting completion of the Tellico project at its advanced stage," and it directed "that this project be completed as promptly as possible in the public interest."<sup>1</sup> The appropriations bill was passed by Congress and approved by the President.

The Court of Appeals for the Sixth Circuit nevertheless reversed the District Court in January 1977. It held that the Act was intended to create precisely the sort of dramatic conflict presented in this case: "Where a project is on-going and substantial resources have already been expended, the conflict between national incentives to conserve living things and the pragmatic momentum to complete the project on schedule is most incisive." 549 F. 2d 1064, 1071 (1977). Judicial resolution of that conflict, the Court of Appeals reasoned, would represent usurpation of legislative power. It quoted the District Court's statement that respondents' reading of the Act, taken to its logical extreme, would compel a court to halt impoundment of water behind a dam if an endangered species were discovered in the river on the day before the scheduled impoundment. The Court of Appeals, however, rejected the District Court's conclusion that such a reading was unreasonable and contrary to congressional intent, holding instead that "[c]onscientious enforcement of the Act requires that it be taken to its logical extreme." *Ibid.* It remanded with instructions to issue a permanent injunction halting all activities incident to the Tellico Project that would modify the critical habitat of the snail darter.

In June 1977, and after being informed of the decision of the Court of Appeals, the Appropriations Committees in both Houses of Congress again recommended approval of TVA's

---

<sup>1</sup> S. Rep. No. 960, 94th Cong., 2d Sess., 96 (1976).



## 76-1701—DISSENT

## TVA v. HILL

full budget request for the Tellico Project. Both Committees again stated unequivocally that the Endangered Species Act was not intended to halt projects at an advanced stage of completion:

"[The Senate] Committee has not viewed the Endangered Species Act as preventing the completion and use of these projects which were well under way at the time the affected species were listed as endangered. If the act has such an effect, which is contrary to the Committee's understanding of the intent of Congress in enacting the Endangered Species Act, funds should be appropriated to allow these projects to be completed and their benefits realized in the public interest, the Endangered Species Act notwithstanding."<sup>8</sup>

"It is the [House] Committee's view that the Endangered Species Act was not intended to halt projects such as these in their advanced stage of completion, and [the Committee] strongly recommends that these projects not be stopped because of misuse of the Act."<sup>9</sup>

Once again, the appropriations bill was passed by both Houses and signed into law.

## II

Today the Court, like the Court of Appeals below, adopts a reading of § 7 of the Act that gives it a retroactive effect and disregards 12 years of consistently expressed congressional intent to complete the Tellico Project. With all due respect, I view this result as an extreme example of a literalist<sup>10</sup> construction, not required by the language of the Act and adopted without regard to its manifest purpose. Moreover, it ignores established canons of statutory construction.

<sup>8</sup> S. Rep. No. 301, 95th Cong., 1st Sess., 9 (1977).

<sup>9</sup> H. R. Rep. No. 379, 95th Cong., 1st Sess., 104 (1977).

<sup>10</sup> See Frank, Words and Music, 47 Colum. L. Rev. 1259, 1263 (1947); Hand, The Speech of Justice, 29 Harv. L. Rev. 617, 620 (1916).

## 76-1701—DISSENT

## TVA v. HILL

## A

The starting point in statutory construction is, of course, the language of § 7 itself. *Blue Chip Stamps v. Manor Drug Stores*, 421 U. S. 723, 756 (1975) (POWELL, J., concurring). I agree that it can be viewed as a textbook example of fuzzy language, which can be read according to the "eye of the beholder."<sup>11</sup> The critical words direct all federal agencies to take "such action [as may be] necessary to insure that actions authorized, funded or, carried out by them do not jeopardize the continued existence of . . . endangered species . . . or result in the destruction or modification of [a critical] habitat of such species . . . ." Respondents—as did the Sixth Circuit—read these words as sweepingly as possible to include all "actions" that any federal agency ever may take with respect to any federal project, whether completed or not.

The Court today embraces this sweeping construction. *Ante*, at 29-32. Under the Court's reasoning, the Act covers every existing federal installation, including great hydroelectric projects and reservoirs, every river and harbor project, and every national defense installation—however essential to the Nation's economic health and safety. The "actions" that an agency would be prohibited from "carrying out" would include the continued operation of such projects or any change necessary to preserve their continued usefulness.<sup>12</sup> The only precondition, according to respondents, to thus destroying the

---

<sup>11</sup> The purpose of this Act is admirable. Protection of endangered species long has been neglected. This unfortunate litigation—wasteful for taxpayers and likely in the end to be counterproductive in terms of respondents' purpose—may have been invited by careless draftsmanship of otherwise meritorious legislation.

<sup>12</sup> Opinion of the Court, *ante*, at 29-31. At oral argument, respondents clearly stated this as their view of § 7:

"QUESTION: . . . Do you think—it is still your position, as I understand it, that this Act, Section 7, applies to completed projects? I know you don't think it occurs very often that there'll be a need to apply it. But does it apply if the need exists?"

## 76-1701—DISSENT

## TVA v. HILL

usefulness of even the most important federal project in our country would be a finding by the Secretary of the Interior that a continuation of the project would threaten the survival or critical habitat of a newly discovered species of water spider or amoeba.<sup>13</sup>

"[F]requently words of general meaning are used in a statute, words broad enough to include an act in question, and yet a consideration of the whole legislation, or of the

"MR. PLATER: To the continuation—

"QUESTION: To completed projects. Take the Grand Coulee dam—

"MR. PLATER: Right. Your Honor, if there were a species there—

"—it wouldn't be endangered by the dam.

"QUESTION: I know that's your view. I'm asking you not to project your imagination—

"MR. PLATER: I see, your Honor.

"QUESTION: —beyond accepting my assumption.

"MR. PLATER: Right.

"QUESTION: And that was that an endangered species might turn up at Grand Coulee. Does Section 7 apply to it.

"MR. PLATER: I believe it would, Your Honor. The Secretary of the Interior—

"QUESTION: That answers my question.

"MR. PLATER: Yes, it would." Tr. of Oral Arg. 57-58.

<sup>13</sup> Under the Court's interpretation, the prospects for such disasters are breathtaking indeed, since there are hundreds of thousands of candidates for the endangered lists:

"The act covers every animal and plant species, subspecies, and population in the world needing protection. There are approximately 1.4 million full species of animals and 600,000 full species of plants in the world. Various authorities calculate as many as 10% of them—some 200,000—may need to be listed as Endangered or Threatened. When one counts subspecies, not to mention individual populations, the total could increase to three to five times that number." Keith Shreiner, Associate Director and Endangered Species Program Manager of the U. S. Fish and Wildlife Service, quoted in a letter from A. J. Wagner, Chairman TVA, to Chairman, House Committee on Merchant Marine and Fisheries, dated April 25, 1977, quoted in Wood, On Protecting an Endangered Statute: The Endangered Species Act of 1973, 37 Federal Bar Journal 25, 27 (1978).

## 76-1701—DISSENT

## TVA v. HILL

circumstances surrounding its enactment, or of the absurd results which follow from giving such broad meaning to the words, makes it unreasonable to believe that the legislator intended to include the particular act." *Church of the Holy Trinity v. United States*, 143 U. S. 457, 459 (1892).<sup>14</sup> The result that will follow in this case by virtue of the Court's reading of § 7 makes it unreasonable to believe that Congress intended that reading. Moreover, § 7 may be construed in a way that avoids an "absurd result" without doing violence to its language.

The critical word in § 7 is "actions" and its meaning is far from "plain." It is part of the phrase: "actions authorized, funded or carried out." In terms of planning and executing various activities, it seems evident that the "actions" referred to are not all actions that an agency can ever take, but rather actions that the agency is *deciding whether* to authorize, to fund, or to carry out. In short, these words reasonably may be read as applying only to *prospective actions*, i. e., actions with respect to which the agency has reasonable decision-

---

<sup>14</sup> Accord, e. g., *United States v. American Trucking Assns.*, 310 U. S. 534, 543 (1940); *Armstrong Co. v. Nu-Enamel Corp.*, 305 U. S. 315, 333 (1938); *Sorrells v. United States*, 287 U. S. 435, 446-448 (1933) (collecting cases); *United States v. Ryan*, 284 U. S. 167, 175 (1931). The Court suggests, *ante*, at 32 n. 33, the precept stated in *Church of the Holy Trinity* was somehow undermined in *Crooks v. Harrelson*, 282 U. S. 55, 60 (1931). Only a year after the decision in *Crooks*, however, the Court declared that a "literal application of a statute which would lead to absurd consequences is to be avoided whenever a reasonable application can be given which is consistent with the legislative purpose." *Ryan*, *supra*, at 175. In the following year, the Court expressly relied upon *Church of the Holy Trinity* on this very point. *Sorrells*, *supra*, at 448. The real difference between the Court and myself on this issue arises from our perceptions of the character of today's result. The Court professes to find nothing particularly remarkable about the result produced by its decision in this case. Because I view it as remarkable indeed, and because I can find no hint that Congress actually intended it, see pp. 12-15, *infra*, I am led to conclude that the congressional words cannot be given the meaning ascribed to them by the Court.

## 76-1701—DISSENT

## TVA v. HILL

making alternatives still available, actions *not yet* carried out. At the time respondents brought this lawsuit, the Tellico Project was 80% complete at a cost of more than \$78 million. The Court concedes that as of this time and for the purpose of deciding this case, the Tellico dam project is "completed" or "virtually completed and the dam is essentially ready for operation", *ante*, 1, 2. See n. 1, *supra*. Thus, under a prospective reading of § 7, the action already had been "carried out" in terms of any remaining reasonable decisionmaking power. Cf. *National Wildlife Federation v. Coleman*, 529 F. 2d 359, 363 and n. 5 (CA5), cert. denied *sub nom. Boteler v. National Wildlife Federation*, 429 U. S. 979 (1976).

This is a reasonable construction of the language and also is supported by the presumption against construing statutes to give them a retroactive effect. As this Court stated in *United States Fidelity & Guaranty Co. v. Struthers Wells Co.*, 209 U. S. 306, 314 (1908), the "presumption is very strong that a statute was not meant to act retrospectively, and it ought never to receive such a construction if it is susceptible of any other." This is particularly true where a statute enacts a new regime of regulation. For example, the presumption has been recognized in cases under the National Environmental Policy Act, 42 U. S. C. § 4331 *et seq.*, holding that the requirement of filing an environmental impact statement cannot reasonably be applied to projects substantially completed, *E. g.*, *Pizitz, Inc. v. Volpe*, 467 F. 2d 208 (CA5 1972); *Ragland v. Mueller*, 460 F. 2d 1196; *Greene County Planning Board v. FPC*, 455 F. 2d 412, 424 (CA2), cert. denied, 409 U. S. 849 (1972). The Court of Appeals for the Fourth Circuit explained these holdings.

"Doubtless Congress did not intend that all projects ongoing at the effective date of the Act be subject to the requirements of Section 102. At some stage of progress, the costs of altering or abandoning the project could so definitely outweigh whatever benefits that might accrue

## TVA v. HILL

therefrom that it might no longer be 'possible' to change the project in accordance with Section 102. At some stage, federal action may be so 'complete' that applying the Act could be considered a 'retroactive' application not intended by the Congress." *Arlington Coalition on Transportation v. Volpe*, 458 F. 2d 1323, 1331 (CA4), cert. denied *sub nom. Fugate v. Arlington Coalition on Transportation*, 409 U. S. 1000 (1972).

Similarly under § 7 of the Endangered Species Act, at some stage of a federal project, and certainly where a project has been completed, the agency no longer has a reasonable choice simply to abandon it. When that point is reached, as it was in this case, the presumption against retrospective interpretation is at its strongest. The Court today gives no weight to that presumption.

## B

The Court recognizes that the first purpose of statutory construction is to ascertain the intent of the legislature. *E. g.*, *United States v. American Trucking Assn.*, 310 U. S. 534, 542 (1940).<sup>15</sup> The Court's opinion reviews at length the legislative history, with quotations from Committee reports and statements by Members of Congress. The Court then ends this discussion with curiously conflicting conclusions.

It finds that the "totality of congressional action makes it abundantly clear that the result we reach today [justifying the termination or abandonment of any federal project] is wholly in accord with both the words of the statute and the intent of Congress." *Ante*, at 29. Yet, in the same paragraph, the Court acknowledges that "there is no discussion in the legislative history of precisely this problem." The opinion nowhere makes clear how the result it reaches can be "abun-

<sup>15</sup> Landis, A Note on "Statutory Interpretation," 43 Harv. L. Rev. 886 (1930).

## 76-1701—DISSENT

## TVA v. HILL

dantly" self-evident from the legislative history when the result was never discussed. While the Court's review of the legislative history establishes that Congress intended to require governmental agencies to take endangered species into account in the planning and execution of their programs,<sup>16</sup> there is not even a hint in the legislative history that Congress intended to

---

<sup>16</sup> The quotations from the legislative history relied upon by the Court are reasonably viewed as demonstrating that Congress was thinking about agency action in prospective situations, rather than actions requiring abandonment of completed projects. For example, the Court quotes Representative Dingell's statement as a "highly pertinent interpretation" of what the Conference bill intended. In the statement relied upon, *ante*, at 28-29, Representative Dingell said that Air Force bombing activities along the Gulf Coast of Texas, if found to endanger whooping cranes, would have to be discontinued. With respect to grizzly bears, he noted that they may or may not be endangered, but under the Act it will be necessary "to take action to see . . . that these bears are not driven to extinction."

The Court also predicates its holding as to legislative intent upon the provision in the Act that instructs federal agencies not to "take" endangered species, meaning that no one is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" such life forms. *Ante*, at 29-30. The Court quotes, *ante*, n. 30, the Secretary of the Interior's definition of the term "harm" to mean—among other things—any act which "annoy[s] wild life] to such an extent as to significantly disrupt essential behavioral patterns, which include, but are not limited to, breeding, feeding or sheltering; significantly environmental modification or degradation which has such effects is included within the meaning of 'harm.'" 50 CFR § 17.3 (1975). Two observations are pertinent. First, the reach of this regulation—which the Court accepts as authorized by the Act is virtually limitless. All one would have to find is that the "essential behavioral patterns" of any living species as to breeding, feeding or sheltering is significantly disrupted by the operation of an existing project.

I cannot believe that Congress would have gone this far to imperil every federal project, however important, on behalf of any living species however unimportant, without a clear declaration of that intention. The more rational interpretation is consistent with Representative Dingell's obvious thinking: the Act is addressed to prospective action where reasonable options exist; no thought was given to abandonment of completed projects.

## 70-1701—DISSENT

## TVA v. HILL

compel the undoing or abandonment of any project or program later found to threaten a newly discovered species.<sup>17</sup>

If the relevant Committees that considered the Act, and the Members of Congress who voted on it, had been aware that the Act could be used to terminate major federal projects authorized years earlier and nearly completed, or to require the abandonment of essential and long-completed federal installations and edifices,<sup>18</sup> we can be certain that there would have been hearings, testimony, and debate concerning consequences so wasteful, so inimical to purposes previously deemed important, and so likely to arouse public outrage. The absence of any such consideration by the Committees or in the floor debates indicates quite clearly that no one participating in the legislative process considered these consequences as within the intentment of the Act.

---

<sup>17</sup> The Senate sponsor of the bill, Senator Tunney, apparently thought that the Act was merely precatory and would not withdraw from the agency the final decision on completion of the project:

"... [A]s I understand it, after the consultation process took place, the Bureau of Public Roads, or the Corps of Engineers, would not be prohibited from building a road if they deemed it necessary to do so.

"... [A]s I read the language, there has to be consultation. However, the Bureau of Public Roads or any other agency would have the final decision as to whether such a road should be built. That is my interpretation of the legislation at any rate." 119 Cong. Rec. 25689-25690 (1973).

See also *Sierra Club v. Froehle*, 534 F. 2d 1289, 1303-1304 (CA8 1976).

<sup>18</sup> The initial proposed rulemaking under the Act made it quite clear that such an interpretation was not intended:

"Neither [the Fish and Wildlife Service of the Department of the Interior] nor [the National Marine Fisheries Service of the Department of Commerce] intends that section 7 bring about the waste that can occur if an advanced project is halted. . . . The affected agency must decide whether the degree of completion and extent of public funding of particular projects justify an action that may be otherwise inconsistent with Section 7." 42 Fed. Reg. 4868, 4869 (1977).

After the decision of the Court of Appeals in this case, however, the quoted language was withdrawn, and the agencies adopted the view of the court. 43 Fed. Reg. 870, 872, 875 (1978).



## 76-1701—DISSENT

## TVA v. HILL

As indicated above, this view of legislative intent at the time of enactment is abundantly confirmed by the subsequent congressional actions and expressions. We have held, properly, that post-enactment statements by individual Members of Congress as to the meaning of a statute are entitled to little or no weight. See, *e. g.*, *Regional Rail Reorganization Act Cases*, 419 U. S. 102, 132 (1975). The Court also has recognized that subsequent appropriation acts themselves are not necessarily entitled to significant weight in determining whether a prior statute has been superseded. See *United States v. Langston*, 118 U. S. 389, 313 (1886). But these precedents are inapposite. There was no effort here to "bootstrap" a post-enactment view of prior legislation by isolated statements of individual congressmen. Nor is this a case where Congress, without explanation or comment upon the statute in question, merely has voted apparently inconsistent financial support in subsequent appropriations acts. Testimony on this precise issue was presented before congressional committees, and the committee reports for three consecutive years addressed the problem and affirmed their understanding of the original congressional intent. We cannot assume—as the Court suggests—that Congress, when it continued each year to approve the recommended appropriations, was unaware of the contents of the supporting committee reports. All this amounts to strong corroborative evidence that the interpretation of § 7 as not applying to completed or substantially completed projects reflects the initial legislative intent. See, *e. g.*, *Fleming v. Mohawk Wrecking & Lumber Co.*, 331 U. S. 111, 116 (1947); *Brooks v. Dewar*, 313 U. S. 354 (1941).

## III

I have little doubt that Congress will amend the Endangered Species Act to prevent the grave consequences made possible by today's decision. Few, if any, Members of that body will wish to defend an interpretation of the Act that requires the waste of at least \$53 million, see n. 6, *supra*, and

## 76-1701--DISSENT

## TVA v. HILL

denies the people of the Tennessee valley area the benefits of the reservoir that Congress intended to confer.<sup>19</sup> There will be little sentiment to leave this dam standing before an empty reservoir, serving no purpose other than a conversation piece for incredulous tourists.

But more farreaching than the adverse effect on the people of this economically depressed area is the continuing threat to the operation of every federal project, no matter how important to the Nation. If Congress acts expeditiously, as may be anticipated, the Court's decision probably will have no lasting adverse consequences. But I had not thought it to be the province of this Court to force Congress into otherwise unnecessary action by interpreting a statute to produce a result no one intended.

---

<sup>19</sup> The Court acknowledges, as it must, that the permanent injunction it grants today will require "the sacrifice of the anticipated benefits of the project and of many millions of dollars in public funds." *Ante*, at 19.

# SUPREME COURT OF THE UNITED STATES

No. 76-1701

|   |                                  |   |
|---|----------------------------------|---|
| <p>Tennessee Valley Authority,<br/>         Petitioner,<br/>         v.<br/>         Hiram G. Hill, Jr., et al.</p> | <p style="font-size: 3em;">}</p> | <p>On Writ of Certiorari to the<br/>         United States Court of Ap-<br/>         peals for the Sixth Circuit.</p> |
|---|----------------------------------|---|

[June 15, 1978]

MR. JUSTICE REHNQUIST, dissenting.

In the light of my Brother POWELL's dissenting opinion, I am far less convinced than is the Court that the Endangered Species Act of 1973, 16 U. S. C. § 1531 *et seq.*, was intended to prohibit the completion of the Tellico Dam. But the very difficulty and doubtfulness of the correct answer to this legal question convinces me that the Act did *not* prohibit the District Court from refusing, in the exercise of its traditional equitable powers, to enjoin petitioner from completing the Dam. Section 11 (g)(1) of the Act, 16 U. S. C. § 1540 (g) (1), merely provides that "any person may commence a civil suit on his own behalf to enjoin any person, including the United States and any other governmental instrumentality or agency, who is alleged to be in violation of any provision of this chapter." It also grants the district courts "jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce any such provision."

This Court had occasion in *Hecht Co. v. Bowles*, 321 U. S. 321 (1944), to construe language in an Act of Congress that lent far greater support to a conclusion that Congress intended an injunction to issue as a matter of right than does the language just quoted. There the Emergency Price Control Act of 1942 provided that:

". . . Upon a showing by the Administrator that [a] person has engaged or is about to engage in any [acts or

## 76-1701—DISSENT

## TVA v. HILL

practices violative of this Act] a permanent or temporary injunction, restraining order, or other order *shall be granted* without bond." 56 Stat. 23 (emphasis added).

But in *Hecht* this Court refused to find even in such language an intent on the part of Congress to require that a district court issue an injunction as a matter of course without regard to established equitable considerations, saying:

"Only the other day we stated that 'an appeal to the equity jurisdiction conferred on federal district courts is an appeal to the sound discretion which guides the determinations of courts of equity.' . . . The essence of equity jurisdiction has been the power of the Chancellor to do equity and to mould each decree to the necessities of the particular case. Flexibility rather than rigidity has distinguished it. The qualities of mercy and practicality have made equity the instrument for nice adjustment and reconciliation between the public interest and private needs as well as between competing private claims. We do not believe that such a major departure from that long tradition as is here proposed should be lightly implied. . . . [I]f Congress desired to make such an abrupt departure from traditional equity practice as is suggested, it would have made its desire plain." 321 U. S., at 329-330.

Only if we were to sharply retreat from the principle of statutory construction announced in *Hecht* could we agree with the Court of Appeals' holding in this case that the judicial enforcement provisions contained in § 11 (g)(1) of the Act require automatic issuance of an injunction by the district courts once a violation is found. We choose to adhere to *Hecht's* teaching that

"a grant of *jurisdiction* to issue compliance orders hardly suggests an absolute duty to do so under any and all circumstances. We cannot but think that if Congress

## 76-1701--DISSENT

## TVA v. HILL

had intended to make such a drastic departure from the traditions of equity practice, an unequivocal statement of its purpose would have been made." *Id.*, at 329.

Since the District Court possessed discretion to refuse injunctive relief even though it had found a violation of the Act, the only remaining question is whether this discretion was abused in denying respondents' prayer for an injunction. *Locomotive Engineers v. M.-K.-T. R. Co.*, 363 U. S. 528, 535 (1960). The District Court denied respondents injunctive relief because of the significant public and social harms that would flow from such relief and because of the demonstrated good faith of petitioner. As the Court recognizes, *ante*, at 29, such factors traditionally have played a central role in the decisions of equity courts whether to deny an injunction. See also 7A Moore's Federal Practice ¶ 65.18 [3]; *Yakus v. United States*, 321 U. S. 414, 440-441 (1944). This Court has specifically held that a federal court can refuse to order a federal official to take specific action, even though the action might be required by law, if such an order "would work a public injury or embarrassment" or otherwise "be prejudicial to the public interest." *United States v. Dern*, 289 U. S. 352, 360 (1933). Here the District Court, confronted with conflicting evidence of congressional purpose, was on even stronger ground in refusing the injunction.

Since equity is "the instrument for nice adjustment and reconciliation between the public interest and private needs," *Hecht, supra*, 329-330, a decree in one case will seldom be the exact counterpart of a decree in another. See, *e. g.*, *Eccles v. People's Bank*, 333 U. S. 426 (1948); *Penn. Mutual Life Insurance Co. v. Austin*, 168 U. S. 685 (1898). Here the District Court recognized that Congress when it enacted the Endangered Species Act made the preservation of the habitat of the snail darter an important public concern. But it concluded that this interest on one side of the balance was more than outweighed by other equally significant factors.

## 76-1701—DISSENT

## TVA v. HILL

These factors, further elaborated in the dissent of my Brother POWELL, satisfy me that the District Court's refusal to issue an injunction was not an abuse of its discretion. I therefore dissent from the Court's opinion holding otherwise.

Mr. LEGGETT. We have Zygmunt Plater from Wayne Law School, who we have talked to before. With him are Dr. David Etnier from the University of Tennessee; Dr. Frank McCormick, Association of Southeastern Biologists; Dr. Jefferson Chapman, University of Tennessee; Dr. William Russell, Oak Ridge; Mrs. Jean Ritchey, VonOre, Tenn.; Mrs. Beulah Davis, same area; Peter Alliman, Esq.; Mr. David Cox, Trout Unlimited; Ms. Sarah Cook, Tennessee Endangered Species Committee; Mr. Hiram G. Hill, plaintiff in *Tellico* case; Mr. James Durham, chairman of the International Indian Treaty Council; Ms. Laura Hill King, Eastern Band of Cherokee Indians; and William Skelton, from the Tennessee Sierra Club.

This afternoon we have the Colorado River Conservation District scheduled with the Midwest Electric Consumer Association. Our work is cut out for us, especially if all these folks have statements. Professor Plater, do you have any suggested reasonable method of splitting up this group?

STATEMENTS OF PANEL CONSISTING OF PROF. ZYGMUNT PLATER, WAYNE LAW SCHOOL, MICHIGAN; DR. FRANK McCORMICK, ASSOCIATION OF SOUTHEASTERN BIOLOGISTS; DR. JEFFERSON CHAPMAN, UNIVERSITY OF TENNESSEE; DR. WILLIAM RUSSELL, OAK RIDGE NATIONAL LABORATORY; JEAN RITCHEY, VONORE, TENN.; MRS. BEULAH DAVIS, VONORE, TENN.; DANIEL BURGNER, GREENVILLE, TENN.; DAVID COX, TROUT UNLIMITED; MS. SARA COOK, TENNESSEE ENDANGERED SPECIES COMMITTEE; MS. JULIE HARDIN, KNOXVILLE, TENN.; JAMES DURHAM, CHAIRMAN, INTERNATIONAL INDIAN TREATY COUNCIL; MS. LAURA HILL KING, EASTERN BAND OF CHEROKEE INDIANS; AND WILLIAM SKELTON, TENNESSEE SIERRA CLUB

Mr. PLATER. Yes, Mr. Chairman, I thought what we would do is call up the various witnesses in panel sessions. We will have four here at the table at a time. I will make a longer statement at first, and then they will summarize their statements, and give, if it pleases the chairman, their statements.

Mr. LEGGETT. Well, why do you not go ahead and proceed? Do you want someone to accompany you in a panel?

Mr. PLATER. If I may, why do I not call up the first four people who are here? They represent a variety of interests. But if I may introduce them for the record and have them sit at the table.

Because of a dramatic occurrence in the last 2 days, TVA and the Department of Interior have just agreed to form a high level task force to resolve this case, and hearings are being held this afternoon in Tennessee, so several of our number on this list are not here. We have made a few adjustments in the witness list which I will introduce for the record.

If I first of all could call on Dr. Frank McCormick, who will testify for the Association of Southeastern Biologists, and is the director of the ecology program of the University of Tennessee.

Also, Mrs. Jean Ritchey of Vonore, Tenn., and Mrs. Beulah Davis of Vonore, Tenn., both of whom own farms in the existing condemnation area of the Tennessee Valley.

Finally, we will have on this panel Mr. Jimmy Durham of the International Indian Treaty Council.

Mr. LEGGETT. Are the other folks here, Dr. Chapman?

Mr. PLATER. Dr. Chapman is here.

Mr. LEGGETT. And Dr. Etnier?

Mr. PLATER. Dr. Etnier, unfortunately, could not be here. He is in Tennessee, but Dr. McCormick will paraphrase his testimony for the record.

Mr. LEGGETT. Dr. Russell, is he here?

Mr. PLATER. Yes, he is. Mr. Alliman and Mr. Hill are not here, and we have arranged with your executive assistant to put in instead Mr. Daniel Burgner, in place of Mr. Peter Alliman, and Ms. Julie Hardin in place of Mr. Hiram Hill. But again, if you wish, I will just introduce them before coming up.

Mr. LEGGETT. Please proceed.

Mr. PLATER. This panel represents a large variety of interests involved in this case, most of which you have not heard from yet. I will go into a short chronology of the case for the committee's purposes, but just let me make this statement.

We have just won a very important victory in the Supreme Court. The Supreme Court supported our position that the snail darter, an endangered species that TVA discovered in its project area in 1973 when this project was hardly underway, makes the Tellico Dam portion of the project illegal, a position that we have been urging since 1973.

But now we are disturbed to discover that we have to defend the rationality, both of the lawsuit, and of the entire Endangered Species Act because of our victory in the Supreme Court.

Paradoxically, in this committee we are not trying to convince the committee that the law should be applied. Our purpose in coming here today is to give this committee some of the information which is not yet on the record for purposes of defense of the Endangered Species Act when questions are raised by your congressional colleagues. Because the heart of the problem is this: There is a very loud attack going on in Congress against the Endangered Species Act because of our victory in the Supreme Court; it is based upon and unspoken, uncritical assumption that having built the Tellico Dam there is now no useful thing to be done, except to flood out the valley.

The facts are just the opposite. In effect, because of TVA's continual refusal to obey the law over the years, we now have two groups of assets. In the dam structure itself, a small amount of

assets, \$3.6 million of concrete, about 10 million dollars' worth of materials in dikes and labor costs, and on the other hand we have the immensely valuable assets of the valley itself. Because TVA has brought this dam to the brink of completion, in defiance of the law, we cannot have both.

So the decision has to be made in terms of which we choose. Now, as this committee has noted in the past through the GAO reports and otherwise, it appears that the assets in the dam are marginal, and the long term profitability of those assets is also marginal.

This dam was justified, not for electric power, not for navigation; but for recreation, in an area where there are already 22 major lakes. It was also justified for the creation of industrial sites in a region where there are already thousands of industrial sites.

The point is that the assets and opportunities represented by the dam are small, marginal, limited. On the other hand, the assets in the valley, and the value of developing those assets is huge. As you noted last week, there are 25,500 acres of prime agricultural land that would be lost. You will hear about that today from people from the farming community. There are industrial acreages which would be destroyed. There are recreational potentials in this valley which make it an incredible resource as it is today, far more valuable than the small amount of benefits that TVA claims would come from the dam. Tourism is also an existing resource that has not been considered. And we are privileged to have representatives from the Cherokee Nation here, raising for the first time in Congress the fact that this dam is not only a loser in its own terms, but also would destroy historical resources that are sacred to the American people.

Mr. LEGGETT. Let me ask you this. If the task force that has been recently appointed over the past 48 hours is going to solve all of this, why do we need to retry it before this subcommittee?

Mr. PLATER. Because, Mr. Chairman, no one knows yet about the task force. It is just only underway. Congress believes this is an irreconcilable conflict. That is the way it has been characterized from the beginning. The task force issued a statement that they believe that the project could be more profitable without the reservoir than with it. But that takes a while to get through to the legislative process, and as you understand, getting the factual record across to Congress has been the problem with the Endangered Species Act as a whole, and with our case in particular.

It is a David and Goliath case, but in this case nobody talks about the battleground. Everybody looks at the little fish, the David, and the Goliath, but no one has talked about the compromises that are being worked out by the agencies on the 38,000 acres of the Tellico project.

As a very brief chronology, the *Tellico* case started in the early 1930's, when TVA put together a catalog of all the dams that would be built in Tennessee. You see them before you, 68 dams. One after another TVA dammed up 2,500 linear miles of rivers in Tennessee. This is the last dam in the Tennessee River system, and therefore this is the last time that we have a chance to preserve a remnant of the free-flowing large river resource. We never would



have had a chance to preserve that resource if it had not been for the coincidental existence of the snail darter.

Mr. LEGGETT. Let me ask you this. Do you think that TVA has been good for Tennessee?

Mr. PLATER. Yes, I think TVA has been extremely important for Tennessee's development.

Mr. LEGGETT. So your big reservation is not all of the dams, but a few of them, is that right?

Mr. PLATER. Let me say that the TVA has accomplished wonders in taking this valley, which was economically probably the most backward area of the United States, and bringing it into the 20th century.

The first 30 or 40 dams probably had tremendous economic justifications. The problem is, the bureaucratic machinery, once rolling, finds it hard to stop until there is no place left to dam, and for that very reason the last dams have been marginal, like Tellico. No generators, no water supply capacity, no irrigation, not really justified for flood control. It is a case of too much of a good thing.

TVA is now changing its scope. President Carter has accelerated that process, so that TVA will be a service agency over this region. We are not adamant critics of everything TVA has done, and we hope in the same vein that the Congress can look at specific projects, and not treat TVA as a sacred cow. That is what it has often been, however.

In the 1960's, TVA pushed this project through. Congress does not authorize TVA projects. They authorize themselves, and can go ahead and build projects without congressional permission. In this case they came to Congress for appropriations, but that is all. Beyond that, however, TVA took the position that the National Environmental Policy Act did not apply to them. They were an emergency agency, established by Franklin Delano Roosevelt. They took the position that they did not have to comply with the National Historic Preservation Act, and of course when the snail darter was discovered in 1973—when, by the way, only \$4 million had been spent on initial construction on this dam, out of a \$120 million total budget for the project—they took the position that the Endangered Species Act did not apply to TVA, and accelerated their efforts after the discovery of the snail darter. The construction expenditures, as part of our submitted material this morning indicates, increased by a factor of three.

The vast majority of project moneys, and expenditure on the dam, was spent after the discovery of the snail darter. It was clearly a question, therefore, not of reasonable attempts to comply with the law, but of TVA trying to beat the citizens to court. The agency took the position that until someone prosecuted them and won on appeal, until the courts ordered them to stop on the project, they would continue full blast, 24 hours a day, 6 days a week.

Mr. FORSYTHE. Could I ask a question?

Mr. LEGGETT. Yes.

Mr. FORSYTHE. Did TVA itself find the snail darter?

Mr. PLATER. It was found by Dr. David Etnier, in August 1973. But the same week TVA went back and found it itself.

Mr. FORSYTHE. After that point what process did they use to consider this situation? Did they do an environmental impact statement?

Mr. PLATER. No; they did it informally. They took the position that they had no obligation to reconsider the project for any of its attributes, and there was an in-house treatment of the endangered species issue. If you wish, I could go into it at greater length.

Mr. FORSYTHE. No, I just want to make sure I understand what you said. TVA took the attitude that they did not have to comply with NEPA, and therefore did not have to do a formal environmental impact statement. In essence, they did it, but did it in-house, as you say, and it was not really in environmental impact statement.

Mr. PLATER. May I clarify that? On the NEPA issue—they initially did not file a NEPA statement. After citizen litigation, they finally filed a statement, but they never considered the entire valley. And the endangered species issue was handled purely in-house, until the Department of the Interior forced it out into consultation.

The committee may wish to get a compilation of correspondence between TVA and Interior, which has recently been issued, which shows that TVA took the position from the beginning that it would not comply with Interior's request.

Mr. LEGGETT. We asked for that information.

Mr. EMERY. In your opinion, under what authority did TVA feel that it did not have to comply with NEPA or with the Endangered Species Act?

Mr. PLATER. There is no good answer to that question. What the TVA Legal Division said is a variety of things. It just was unreasonable to comply with the act, because it was a silly little fish, a so-called snail darter.

A second argument was that continued appropriations had amended the law. This was the argument that the Supreme Court, of course, rejected overwhelmingly, TVA, however, said any project that receives money does not have to comply with contrary Federal law. But the arguments were just that weak.

It was essentially a practical refusal: "We are not going to do it. You have got to take us to court." That was repeated again and again, and it was unfortunate; we had hoped there would be good faith and voluntary compliance with the law.

Mr. EMERY. If we are going to have a law, regardless of whether we have a project, then there has to be some procedure which is followed, and there should not be any exceptions to the extent that the law covers one situation but will be ignored arbitrarily in another.

You know, I do have some practical considerations about both the viability of the dam and whether the snail darter should hold up a project.

Mr. PLATER. We will be pleased to talk about that. Of course, the snail darter is an indicator of a great deal more than just itself, but to answer your procedural question, TVA is the only agency that has systematically refused to comply over time with the full consultations. There have been thousands of other agency cases which have been worked out according to the guidelines—and now regulations—of the Department of the Interior.

It is quite simple: You look first of all and see if there is a conflict. In most of the cases it is determined that really there is no conflict at all. If there appears to be a conflict, then there is a threshold screening process, and only when you get down to the end does Interior go into a formal procedural consultation.

Mr. EMERY. But the bottom line is there is no provision in the law which specifically exempts TVA, or any other project.

Mr. PLATER. No, sir. It was a self-created exemption.

Mr. EMERY. But on the other hand, there is also no well-defined procedure that TVA or any other agency would, of necessity, follow to take the law into consideration.

Mr. PLATER. No sir, that is a common misimpression. Guidelines were issued, setting up the procedure that I detailed, shortly after the passage of the act, and those were then joined by proposed regulations, and now final regulations, so that there is a streamlined procedure set up. It is only where the agency declines to comply with this kind of problem that such conflicts have answers.

Mr. EMERY. It is also important to note that the law does not mandate final action. What it does is mandate consultation. The same as with an environmental impact statement. An environmental impact statement does not mandate action. It mandates the discovery of, the information of alternates, and all of these things, but it no way does either of these. If Interior says there is a habitat to be protected, that in and of itself does not become a mandate.

I think that is an important point, and I think the reason it is important to discuss for a few minutes is that NEPA, has been used in any number of situations when it affects the environmental impact of the dam, or the closing of an Air Force base, which is a situation that happened in my State.

There has been broad interpretation of what comes under the law, and in other situations there has been narrow interpretation, depending on the nature of the project, the attitudes of citizens, and many other things. But the thing that I found in one particular situation in our State was that although the procedure was spelled out, there must be a consultation, and there must be an environmental impact statement filed, and so forth.

There was no carefully spelled out, or delineated procedure that agency people would respond to, or that answers would be complete, or that the information received would be checked for accuracy or completeness.

So all we have is requirements on the books that something be done, it is really a little more window dressing, because the information has not been verified or completed.

Mr. PLATER. As you can imagine, the endangered species question has only recently come to the attention of the construction agencies. I am told that they are taking it very seriously now, and things appear to be improved in terms of efficiency. The same thing happened, as you suggested, with NEPA, if there are other questions about the procedure, perhaps I could handle those at the end of the panel.

Let me just note that in 1974, a year after the snail darter was discovered, the Boeing Corp. pulled out of the experimental city which had been used to justify the project; but TVA pushed on. The Governor of Tennessee requested that the project be converted

to river-based alternatives—the compromise that we are urging today, and have been urging for years. TVA ignored those, as well, so that finally we were forced to go to court. We filed a petition with Interior, for listing the species and its critical habitat, and in 1976, after repeated requests of TVA to comply, we went to court.

The facts were absolutely clear: The snail darter would be exterminated in this river for the same reasons that many of us have been fighting for the river, long before we knew about the snail darter. That is to say, the species requires precisely the habitat qualities of the last large, big, cool clear river left in the system after all those dams—the only population left survives in the last undammed stretch of the river, so that the fish acts as a barometer of human and economic qualities as well.

Now, finally, after our success in the Supreme Court, TVA and the Department of the Interior have reached a new agreement. No longer will they refuse to consider alternatives for development of the valley. Now they are undertaking a high level task force. Mr. Herbst, the Assistant Secretary, who testified before this committee, and Chairman Freeman of the TVA, who will testify this week, themselves will head this task force for resolving the issues. It appears that that can be done.

I would just summarize our frustration this way. Essentially the problem with the attack in Congress on the Endangered Species Act, and upon the *Tellico* decision, is that it is asking the wrong question. It is saying, you people in Tennessee prove why the dam should not be closed and the valley flooded.

I would note that that is the wrong question. There is not an iota of factual evidence on the record before you why this dam is worth closing, and flooding up the valley, in light of its marginal economics.

We would say that the burden in Congress should be put upon those who want to amend the act, and exterminate the species from the face of the Earth. Yet that is not the way the discussion is going. The burden of proof is on those who are defending common-sense, the act, and economic development for the valley.

We believe that this committee can do a great deal to change that burden. The question should be to those who want to amend the act, to flood out the *Tellico*, or to change the act, “why?” On the facts, why is it better in the public interest to do so?

We are confident that if the decision in Congress is based on the facts, we have nothing to fear, either for *Tellico*’s snail darter in particular, or for the Endangered Species Act.

[The following was received for the record:]

#### STATEMENT OF ZYGMUNT J. B. PLATER

I am Zygmunt Plater, an environmental law professor at Michigan’s Wayne Law School and, starting in 1974 when I was a member of the faculty of the College of Law in Knoxville, Tennessee, I have been petitioner, co-plaintiff and attorney in the *Tellico* Dam case we are discussing today.

I regret that the *Tellico* case has had to come here to Congress, absorbing so much Congressional and staff time in preparation, for it is a prime example of the kind of case which could and should have been resolved, like hundreds of others, through good faith interagency consultation under the Endangered Species Act.

Nevertheless, the conflict between the TVA and the snail darter is the first such case to be brought for your oversight review. It has become one of the national precedent cases under the Endangered Species Act, and the thoroughness and

consideration given this review will go a long way toward establishing sound practices for agency actions and citizen concerns under the Act in the future.

#### THE TELlico AS A CASE STUDY: SETTING

The Tellico dam is one of the last two dams to be built in the Tennessee Valley area; as a glance at the attached map will indicate, there are more than 60 other dams already built on the river system, making it into a series of long impoundments from its headwaters in the east all the way down to the Mississippi. Most of these were compiled in a 1930's list of potential damsites. The first and second waves of dams to be built were strategically important to developing the Tennessee Valley, providing power, jobs, and main channel industrial transport. By the end of the list, however, the damsites have become more and more marginal; the most recent dams, including Tellico, have no electric generators, little flood control effect, and diminished relative benefits.

The Tellico damsite lies at the end of a shallow scenic valley adjoining the Great Smokey Mountains National Park. Its elevation falls only 72 feet in 33 miles, so its impoundment level is severely limited. But the valley is extraordinarily valuable in public terms: after 68 dams, it has the last such clean, cool flowing river left and contains the region's finest and most extensive trout-fishing waters; there are 16,000 acres of prime agricultural land along the river; the valley area is a recreational resource which adjoins both the Smokies and the Cherokee National Forest, and the rich bottomlands contain some of most important Cherokee, colonial, and prehistoric sites in the region, including Chief Sequoyah's birthplace at Tuskegee, Chota, the Cherokee Jerusalem, Tennessee which gave its name to the river and the state, and two sites which have the oldest continuous evidence of human occupation in the United States.

#### THE PROJECT

The TVA turned to Tellico in the early 1960's when virtually all other dams in the 1930's list had been built. They solicited the support of Senator Estes Kefauver and the local member of Congress, Rep. Frazier, but both rejected the need for the dam. After Senator Kefauver died, TVA renewed its efforts, and after once being rejected by Congress finally succeeded in getting initial appropriations in 1966. (Since TVA was established as an agency with emergency powers, it does not have to get Congressional authorization for its projects.)

The Tellico Project, it is important for us now to note, is not a traditional water project: it was justifiable only as a regional development project which the agency chose to design around a dam. The benefit-cost justification had recreational management and shoreland development as its primary purposes, with only minor benefits in flood management, barge traffic, and power (via a small canal into an adjoining lake). The land development was premised upon the construction of Timberlake New Town, an industrial town to be funded by Congress and the Boeing Corporation (both of which decided to withdraw in 1974-75) and explains why TVA condemned 38,000 acres, or more than twice as much land as necessary for the reservoir. By reselling this land at a profit, part of the project costs could be recaptured. Neither purpose requires the Tellico reservoir, however, since recreational management of the river valley offers advantages over one more seasonal reservoir (22 within 50 miles; all TVA lakes lie drawn-down into mudflats for 6 months a year), and industrial development has not lake prerequisite (Timberlake was patterned after the inland Minnesota Experimental City; the lack of a logical tie between a lake and industrial development is shown by Melton Hill Lake, 4 miles from Tellico, where more than 1,100 industrial acres still lie vacant after 14 years, and only one industry using the lake has located there, despite ample barge facilities and a location 10 miles closer to Knoxville and Oak Ridge). Congress did not appropriate money for Tellico on the traditional water-project bases, but rather on the understanding that it would be a regional development project.

#### PROJECT OPPOSITION

The special public qualities of the Little Tennessee River Valley, and the marginal nature of the Tellico project, combined to insure the prolonged opposition efforts that have continued against the reservoir since the early 1960's.

The dozen local citizen groups active in the 1960's did not attack the idea of a regional development project in general, but rather the dam segment of the project. Even after the concrete dam was poured in 1967 they urged that the project be redesigned for flowing river management; since the dam construction costs were and still are a minor portion of total project costs, such modifications appeared both desirable and feasible.

In 1971 the local groups, led by the Association for the Preservation of the Little T, local farmers, and Trout Unlimited, successfully argued that TVA had to comply with NEPA. An injunction halted construction until 1973 when the district court accepted a revised environmental impact statement, though TVA never considered river-based development modifications.

In 1972-73, the Governor of Tennessee, Winfield Dunn, officially requested TVA to alter the project plans to eliminate the reservoir plans. TVA informed the Governor that they did not agree with him, and continued construction activities as soon as the court injunction was lifted. (Nor did the agency alter its plans when the Timberlake project collapsed, removing one of the primary underpinnings of the project justification.)

#### THE SNAIL DARTER

The final chapter of citizen opposition began in August 1973, when Dr. David Etnier of the University of Tennessee, Department of Aquatic Biology, a nationally recognized darter expert, discovered the snail darter in the broad river shoals near Coyote Springs. It soon became clear that the fish existed nowhere else on earth, though it once had probably inhabited the entire eastern portion of the river system.

The snail darter became a lawsuit, not just because it was an endangered species that would be completely eliminated by the dam, but also because it possessed qualities that made it a sensitive biological indicator of precisely the river qualities that concerned the citizen advocates. The species had been reduced to a relic population by its extreme sensitivity to water quality conditions: it requires clean, clear flowing big river water with extensive shoals and clean gravel bottom conditions. By its very existence in the Little T, and only the Little T, it gave legal recognition to the fact that this stretch of river, too, was the last of its kind.

#### ADMINISTRATIVE ACTION

The pro-river citizens initially hoped that TVA would voluntarily review its Tellico activities in light of the apparent statutory problem with the snail darter. In 1973 only \$4 million had been spent on the initial dam work as compared to the present \$120 million projected budget; the dam itself was marginal (even now the dam's cost is only \$13 million in materials and half that more in labor) and rumors around Knoxville were that Boeing Corporation was thinking of pulling out of the Timberlake segment of the project (which it did a year later).

Chairman Wagner soon made it clear, however, that the agency would not review the project until forced to by citizen litigation. Referring throughout to the "so-called snail darter" TVA first took the position that the fish was not a species. When it was recognized as a species by the scientific community, the agency argued it was not endangered, first because it certainly existed in many other places, then when a search of 60-70 rivers failed to locate any other snail darters, because it certainly could live in an impoundment. When scientific evidence indicated it could not live in an impoundment, the agency argued that the fish could not be listed because its Latin name was still being processed.

Beginning in the fall of 1974, the Fish and Wildlife Service maintained continuing efforts to obtain TVA consultation on protection of the species in its natural habitat. The construction agency, however, insisted that the only conservation efforts to be considered could be removal of the darter from the project area. Interior repeatedly complained that this approach did not meet "the intent or requirements under section 7 of the Act." TVA replied "we shall be happy to consult further if you have additional suggestions or plans which will allow completion of the project \* \* \* and conserve the snail darter."

TVA refused to enter requested formal consultation with the Service on any basis besides reservoir completion, though Interior suggested a variety of possible non-reservoir alternatives deserving of study. The agency continued construction throughout its discussion with the Service, declaring that timber-cutting and dam construction did not themselves directly pose a threat to the species, despite Interior's logical declaration that the consequences of those actions "would result in destruction of the ecosystem."

The agency also systematically denied that the law applied to the Tellico project, on the ground that appropriations had continued, that it was increasingly near completion, and that it would be "foolish" to stop for consultation over a little fish.

As a result of the administrative communications, the listing of the fish and its critical habitat were delayed, to October 1975 and April 1976 respectively, and no formal consultation ever occurred with regard to protection of the fish in its Little T habitat. Since the date that Interior required return of juvenile fish captured by

TVA back to their habitat in the Little T, TVA has refused to take any active conservation measures for the darter in its natural habitat.

#### LEGAL ACTION

After a year and a half of attempted persuasion, the citizens gave up and filed a lawsuit in February 1976. The trial court found all the elements of multiple violations of the Act, but declined to enjoin because the project had been brought so far along. The Sixth Circuit accepted the facts and required compliance with the law via an injunction. The Court's theory was that regardless of how long the violation had continued and construction pushed toward a conclusion, the law required a halt so that alternatives could be evaluated by the agencies and Congress.

The Supreme Court has now agreed—the reservoir violates the law, and TVA can no longer avoid a reasonable compromise.

#### TVA'S ADMINISTRATIVE POSTURE PRIOR TO 1978

The fundamental problem revealed in TVA's reaction to the statute, the snail darter, the Department of Interior's administrative efforts, and citizen concerns, is that the agency persistently declined to consider any protection of the endangered species in its natural habitat in the Little Tennessee River. Put another way, TVA has refused to consider any alternation of the Tellico regional development project from the reservoir impoundment model as originally proposed.

The most important lesson of these hearings is that conflicts between public development projects and endangered species can be reconciled if the agencies consult in good faith, with an eye toward identifying project impacts and modifying projects where necessary to be compatible with conservation of natural populations.

The GAO and alternatives studies presented here make clear that even now, remarkably, with the dam virtually complete, the project may be more valuable and more cost-justified if the valley is not flooded. The Valley can be developed for agriculture, recreation, industry, tourism and historical management. It would be fitting if this committee, after reviewing these facts, would send the issue back to the agencies to develop, for the first time, viable alternatives for the project area in addition to the flooded impoundment option. There is no need for an immediate decision: the region already has more than enough industrial lots on lakes, and flatwater impoundment recreation (Tennessee already has more impoundment area per person than any other place in the world).

Instead of the last of the marginal dams, it would be fitting if TVA, which has been shifting its attention to regional development projects, made Tellico a showpiece as the first of the new regional economic demonstration project areas.

#### THE NATIONAL PRECEDENT

After NEPA was passed in 1970 there was a chorus of voices crying for alternations in the statute to reduce its scope or exempt projects. None of those bills passed, and the Republic survived.

Tellico is a prime opportunity to set a formal precedent under the Act: by insisting that no case be forced to a decision by Congress until logical alternatives are developed, that no agency avoid federal laws by ignoring them long enough, that no exemptions be made from the Act unless the public interest is demonstrated to require it, and that Congressional review will be rigorous and balanced, the committee will insure that the Act will not become a political football. Agencies will be encouraged to resolve potential conflicts in good faith in the administrative process, and the public will have the best chance of achieving both development and the conservation policies that motivated the Congress to pass the Act so overwhelmingly in 1973.

**Mr. LEGGETT.** When is this subcommittee going to get the facts? I think we can all agree that we support the act. We do not want to allow endangered species to disappear. On the other hand, there seems to be a large syndrome in the country today against Federal waste and spending.

So what we need is some kind of a cost-benefit analysis.

Of course, we have had your conclusions. We have had a number of other conclusions that the industry is marginal, that the agriculture is great, that there are alternative uses. We have had studies by the University of Tennessee and the Department of Agriculture, and these study efforts exempt the real economics of the matter.

And they said that was not their purview. We gave GAO a charge to review the cost-benefit analysis and, apparently, they looked at some of the original projections but never brought anything up to date.

So, do you have any estimate of the costs to do a proper cost-benefit analysis on this project at this point?

Mr. PLATER. That is a commonsense question. No; I do not have a dollar figure.

Mr. LEGGETT. Should we look to TVA for this?

Mr. PLATER. That is precisely where we should look.

Mr. LEGGETT. TVA, of course, has been kind of a disabled agency. They have had a chairman but no members.

Mr. PLATER. Right.

Mr. LEGGETT. As a result, they have not been able to defend whatever prior policies that may have come up. We have not called them before this committee, not knowing really what their policy was, and we did not want to crowd them at all.

So, I think we are going to have to get down to that point and figure out what the numbers are?

Mr. PLATER. Mr. Chairman, I could not agree more.

Mr. LEGGETT. We have had your very eloquent presentation before this subcommittee before. We have gone now for about 30 minutes. We have an hour before lunch and so, counsel, you can use the time as you want. I think you, perhaps, orchestrated most of these witnesses this morning. I want you to use the witness this morning to your maximum advantage and if we proceed now we will have a few minutes each before lunchtime.

Mr. PLATER. Mr. Chairman, you have been very kind to witnesses over the past week, giving the opponents of the act a great deal of time, giving proponents a great deal of time. I did not orchestrate these witnesses.

Mr. LEGGETT. I meant that as a functional analysis.

Mr. PLATER. I think your point is a good one. The burden of proof on the numbers, I think, goes to those who would amend the act. TVA and Interior in this task force hopefully will present finally the benefit-cost figures that you, Mr. Chairman, are looking for, and I think we can serve your inquiry by turning now to the variety of witnesses that we have who will give you evidence for a Tellico compromise.

Mr. LEGGETT. The other problem is the compromise that you suggested, that is, Mr. Herbst is on this board indicating that he is against this dam even if there were no Endangered Species Act.

Mr. PLATER. I do not believe that he or anyone has accused him of saying that, that puts him in a biased position.

Mr. LEGGETT. He admits that he is in a biased position?

Mr. PLATER. I believe he has reviewed the record, sir, and on the basis of the record he believes that the dam is not cost-effective. That to me is—

Mr. LEGGETT. No. I think that the record shows that completing this dam, would have a benefit-cost relationship of about 20 or 30 to 1 at this point.

Now, if those figures are wrong, I have been sitting here waiting for somebody to disprove them other than just by subjecting generalities.



Mr. PLATER. I think, if I may submit something for the record later on on exactly that point, that that benefit-cost ratio allegation is not supported now even by TVA's own figures. The remaining benefit-cost ratio requires presumptions that have been shown to be inaccurate.

If I may submit that later rather than take time now.

Mr. LEGGETT. We will look forward to that additional evidence. [The material was not received at time of printing.]

Mr. PLATER. Thank you, Mr. Leggett.

I would like to introduce Dr. Frank McCormick.

Mr. LEGGETT. Dr. McCormick, nice to have you before the subcommittee.

#### STATEMENT OF DR. FRANK McCORMICK

Dr. McCORMICK. What I would like to do first is summarize Dr. Etnier's testimony which I have here in written form. Dr. Etnier is a professor of zoology and ecology at the University of Tennessee. I think his testimony brings out five main points regarding the snail darter specifically.

Dr. Etnier found the snail darter in August 1973, and he points out why and how he came to find it. I think that is probably important because some people may think, well, they went out looking for an endangered species as a way of stopping the project, and that is not the case.

Dr. Etnier describes his search as being because this was a site farthest downstream from existing dams, and this area had not been collected before. Being farthest away from previous impoundments, it should be the area highest in natural species. Dr. Etnier also concluded that the snail darter used to have a much wider distribution. Its closest relative is in the Ozarks, and it was undoubtedly distributed throughout the Little Tennessee River and its tributaries. So the Little Tennessee River is the last habitat having those qualities of the environment that will sustain populations of that species.

It is also widely known that there is no recognized authority in ichthyology, or zoology, that disputes the snail darter as being an endangered species.

A third point, that Dr. Etnier makes is that very wisely the Endangered Species Act protects this species habitat, and habitat protection is even more important than the snail darter that he discovered. The snail darter is a good signal, a warning signal, if you will, that this is the last of a kind of habitat.

Last, he points to the transplantation study that you have heard a lot about. He calls attention to the fact that the Hiwassee River, to which the snail darters were transplanted, and his own graduate students were involved in this, is not the habitat or the type of habitat upon which a snail darter is dependent. The conditions of that habitat are not similar enough to those of the natural habitat and, besides, if it were quite similar there is no reason that snail darters would not have been there.

Mr. LEGGETT. His conclusion is that the transplantation is not effected?

Dr. McCORMICK. His conclusion is that effectiveness of transplantation cannot yet be concluded. The population is declined to no

more than one-third of the original number transplanted, and numbers to the contrary published by TVA are not based upon the available reliable data. That is in his testimony.

Mr. LEGGETT. When does he think that you can draw the proper conclusions?

Dr. McCORMICK. He does not say in his testimony, but in discussions with him, I would guess you would go 4 or 5 years. You may know better, but I think Dave is talking about—well, we take 4 or 5 years to really know.

Mr. LEGGETT. Some other people have testified it would take 2 or 3 years. So we have some conflict in that.

Dr. McCORMICK. These estimates do put sideboards on the time though.

Mr. LEGGETT. Yes; I understand.

Dr. McCORMICK. And I think those are the major points of Dr. Etnier's testimony.

[The following was received for the record.]

#### STATEMENT OF DR. DAVID A. ETNIER

Gentlemen: My reason for surveying the fish fauna of the lower Little Tennessee River in August 1973, was related to the high probability that the areas farthest from the influence of the upstream dams would most closely resemble the pre-impoundment Little Tennessee River, and would have the highest diversity of native fish species. Moreover, I was aware of the fact that fish collections were completely lacking from the lower twenty miles of the river.

The snail darter was surely widespread in the pre-impoundment Tennessee River; its closest relative occurs in the Ozarks. The unique conditions necessary for its survival have been eliminated from the main Tennessee River and all of its larger tributaries, and the snail darter has been left in only a small portion of its original range—the lower Little Tennessee River. The very presence of the snail darter there, and nowhere else, confirms, the unique qualities of this habitat. The great wisdom behind the Endangered Species Act is that it doesn't merely discuss endangered species—it uses them as indicators of unique and vanishing ecosystems. Endangered species are far more than the often insignificant little beasts to which they have been reduced by the media—they are our only reliable key to identifying disappearing habitats and ecosystems.

The transplant of about seven hundred snail darters to the Hiwassee River has received considerable attention, with the popularized notion being that if the transplant is a success, we no longer need to consider the snail darter as endangered. Since there are no records of snail darters from the adequately collected lower Hiwassee River, this is not the "habitat upon which they depend." Does maintaining a reproducing population of California condors in a zoo satisfy the goals of the E.S.A.? The two are not very dissimilar, and I don't feel that either alternative satisfies the wording, or honors the wisdom, of the Act. Although the transplant has a limited chance of success, and I sincerely hope it succeeds, it is still too early to accurately predict the probable outcome. After several years, TVA data indicates that the Hiwassee population is down from the seven hundred initially transplanted to about two hundred fifty at present. Admittedly, this estimate is very crude, but it is the only estimate that can be made with the available data. The recent TVA reports of 1,500-2,000 snail darters in a "thriving" Hiwassee River population are not to be considered as estimates, since they fail to consider available data.

Regardless of ultimate failure or success of the Hiwassee transplant, the only remaining natural population of snail darters occurs in the lower Little Tennessee River. This population can thrive indefinitely under all alternative uses for the project area that do not include an impoundment. Available data strongly suggests that among these non-reservoir alternatives there exist possibilities that would be of approximately the same or greater value to residents of the area and the taxpaying public. Keep in mind that the functional existence of a reservoir is estimated to be one hundred years. Under any alternative plans, the productive life expectancy of the project area is essentially infinite.

Tellico Reservoir, as originally conceived, is not essential to the well-being of the Nation or the people of the area. The extremely high percentage of Endangered and Threatened fish and mussel species that occur only in big rivers again reflects the

wisdom of the Act—big rivers are disappearing ecosystems. It is difficult to break from tradition, but all the data points to the extreme importance of learning to utilize riverine ecosystems as they are. Let's try it with Tellico—we have a great deal to gain and, since the impoundment could be completed in the distant future if it was determined to be essential to the public interest, nothing to lose.

Thank you.

Dr. McCORMICK. The other hat I am wearing is that I am here representing the executive committee of the Association of South-eastern Biologists. ASB is the largest association of professional biologists in the country. They are also a plaintiff in the *Tellico* case against TVA. One reason I am here representing ASB is to reaffirm their support for the Endangered Species Act and to state opposition to amendments to section 7.

The other thing is, in sitting here and listening to previous hearings, it became obvious that there are certain questions that it might help to answer. It is very clear that we do not need to present a sympathetic case to you because you are the originators of the act, you know the facts much better than any other group. But from a biological perspective, maybe there are a few things that we could put to rest or give you some advice or guidance on strictly from a biological perspective.

One of these points that is the Endangered Species Act is not inconsistent with biological principles. It is just nonsense to think that it is. Natural selection and species extinction, are both natural phenomena. Man is often responsible for the direction and rate of selection and extinction to an equal degree we must protect species from these anthropogenic forces. Protection is management of one form. Most reasonable ecologists agree that we should think of man in nature, not man and nature. We do a lot of things.

For example, it has been concluded, that there is no ecosystem in the United States that remains unaffected by man's activities. For example, acid grain problems. There is hardly any way to put boundaries on an air shed. Even the kind of management that we call protection is sometimes necessary to bring things back into balance and to have a counter effect upon negative impacts.

We must think of man in nature and of species protection as being part of an overall management process.

Another problem which seems to be troubling the committee is the specter of 1,800 additional species of plants and 600 animal species causing an endangered species to lurk behind every Public Works project. This is preposterous. I examined the list of species, some 1,763, I believe, and if we look at it every carefully, the apprehensions are really unwarranted. Two States alone, your home State of California and Hawaii, account for 67 percent of all these species. In these two States both Federal and State government agencies have given clear signals that the additional species are not going to be a problem.

In California, is fact, they have mapped the distribution of every one of these species.

Mr. LEGGETT. Of course, when 67 percent of the species are in the chairman's home State, that is what you call 100 percent impact.

Dr. McCORMICK. I wondered about mentioning that. However, it is significant from a national perspective.

Eight percent of the States do not have any species and 84 percent of the States have less than 2 percent of the total number

of species on that list. So, from a national perspective, it is significant although this point may not help you too much at home.

Another thing about which I have heard testimony, is that you can get half a dozen good biologists to look for an endangered species anywhere and stop any Public Works project. I think good professional biologists know better than most, the danger of misusing the Endangered Species Act. A good number of our 1,400 member constituency spends a lot of time trying to remove from the list species that should not be on the list.

I submit this testimony on Behalf of the Association of Southeastern Biologists.

[The following was received for the record:]

STATEMENT OF DR. J. FRANK MCCORMICK ON BEHALF OF THE ASSOCIATION OF  
SOUTHEASTERN BIOLOGISTS

The Association of Southeastern Biologists (ASB) takes this opportunity to reaffirm its support of the 1973 Endangered Species Act and to state its opposition to the proposed amendment to Section 7 of that Act. ASB, the largest regional association of professional biologists in the United States, hopes this testimony will assist the Committee in its efforts to attain reauthorization of the Act. We are in opposition to any amendment which will weaken the Endangered Species Act.

No irreconcilable conflicts have resulted from this Act thus far. As you well know, conflicts which have arisen are being resolved. Delays have been due to agency non-compliance rather than unworkable provisions within the Act.

ASB became a co-plaintiff in litigation against TVA concerning unjustified destruction of the Tellico River Basin in the Belief that this Act, just as all laws of our country, should apply equally to all individuals and all agencies.

This Subcommittee may decide it necessary to amend the Act for reasons it knows best. However, the Act should not be amended on the basis of misconception. We wish to dispel certain misconceptions of a biological nature which have been presented to the Subcommittee in prior testimony.

The Endangered Species Act is not inconsistent with basic principles of biology, notably natural selection and the phenomenon of extinction. Man does not exist apart from nature. Interdependencies between man and environment are as real as those between man and man or those between state and state. The actions of man, be they acts of resource development, acts of war, acts of love, or acts of conservation are strong threads in a fabric of constant change which exerts selection pressure upon the mutable germ plasm of our world ecosystem.

Species protection is but one of many forms of resource management. Man is not above or apart from nature. His activities are, for the most part, quite natural. A strong message from the science of ecology tells us that our proper and real role is one of man in nature, not man and nature. In Eastern North America there is no ecosystem unaffected by human activity. Resource management is appropriate, even necessary, to mitigate unavoidable impacts of human activity. Species protection is a most necessary form of corrective action.

The specter of 1800 plant species being added to the endangered species list appears to create apprehension among those concerned about public works projects. Apprehensions concerning proposed additions to the endangered species list are unwarranted. Of the 1783 native species listed by the Smithsonian Institute for consideration, over one half are restricted to Hawaii and one third of the remainder are restricted to California. Further analysis of species distribution patterns reduces the list to a relatively few species of national concern. Many endangered species co-exist in the same critical habitats, further reducing the opportunity for conflict in any region. Also, there is no reason to predict a significant correlation between distributions of critical habitats and public works projects. Therefore, conflicts cannot be expected to increase in proportion to an increased number of endangered species. States most significantly affected such as Hawaii and California have already indicated their ability to cope with problems which may arise. Both states have already adopted laws to protect these species, and state and federal botanists have been assigned to implement endangered species programs. Distribution maps are already available for California species. Two federal agencies, BLM and USFS, have already accepted the Smithsonian list as a guideline for management decisions. Any problems encountered by these state and federal agencies can be expected to further diminish as the proposed number of endangered species is reduced. Deliber-

ate review of candidate species during the past three years has resulted in only seventeen plant species being listed as endangered. The same deliberate review can be expected to result in a significant reduction in the 1783 candidate species; especially since the Smithsonian list is in part based upon rarity.

The proposition that a half dozen professional biologists can find an endangered species behind every proposed dam or highway project is preposterous. Professional biologists recognize, better than most, the inevitable penalty for misuse of the Act. Several of our membership devote significant professional time to the study of endangered species in order that those species which need not be listed be removed from the list.

We respect the patience and wisdom of the Subcommittee and remain confident the intent of the Endangered Species Act will be well served under its purview. The Act, just as the species it protects, is not immutable; but let change be for valid and necessary reasons and not be based upon biological misconceptions.

We sincerely hope our testimony proves useful in your deliberations.

Mr. LEGGETT. Do you think the effort of the biologists are not really viable?

Dr. McCORMICK. I think those are viable efforts just as in the case of the snail darter. I do not think that these efforts are producing irreconcilable conflicts; if there is not a planned delay or lethargy on behalf of the agencies involved, these problems can be resolved. The problem is not due to the act itself. I do not personally believe it is due to the diligence of biologists or their efforts. It is the lack of consultation and compliance by Federal agencies that is the greater problem.

Mr. LEGGETT. Thank you.

Mrs. Ritchey.

Mrs. RITCHEY. Good morning.

Mr. LEGGETT. Very nice to have you here.

#### STATEMENT OF MRS. JEAN RITCHEY

Mrs. RITCHEY. I am glad to be here. My husband, our children and I live in Loudon County. We have not moved from our place. We live on a part of the 22,000 plus acres that TVA took to be resold to help pay for this obsolete project. This dam does not produce electricity. It does not produce electricity because there are no facilities at the dam to generate any. And by TVA's own admission, it is very marginal on its flood control also.

Mr. LEGGETT. Cost benefit?

Mrs. RITCHEY. Cost benefit and also on its water flooding of Chattanooga. Chattanooga is flooded by Chickamauga Creek and not by the upper part of the river. We could not find out what they wanted with all of our land, as we live miles from the dam, and only a small part of our land, less than 3 acres along the creek that flows into the river, would be affected by the reservoir. Nobody would tell us in TVA what they wanted with it. So my husband said this is where we live and where we make our living. We need to know why we have to go.

So, finally, we wrote to Senator Brock. We got an answer from him, through Red Wagner. He said Congress had allowed TVA to buy the extra 22,000 acres to be sold, to help pay for this project. Somehow I just cannot believe that could happen. How could that be? Why did Congress do that? I do not think the TVA ever tells the truth of what is there, what they are going to destroy if the river is dammed.

TVA has treated that area as if it were their own private playpen and damn whoever stands in their way.

Mr. LEGGETT. Did they condemn you?

Mrs. RITCHEY. Yes, sir. The condemnation papers was stated the taking was for the building and the maintenance of the Tellico Dam. So, as we live miles from the dam, that left us out, and only the reservoir at the edge of the creek could affect us—less than 3 acres.

Mr. LEGGETT. Did your condemnation case go to court?

Mrs. RITCHEY. Yes, sir. We were not allowed a jury trial.

Senator Baker pulled the teeth. He left it up to the judge whether we would have a jury trial or Commission hearing. So we went before a Commission, TVA lied like dogs about our place. They never offered us enough to replace ourselves. And besides we feel it is morally wrong to take one's place by eminent domain if TVA does not have a good legitimate reason, and they did not. This land is very fertile. It is rich. It goes deep. The potential there is tremendous. You would never know unless you farmed there just how fertile. The river is beautiful itself, and most of TVA's propaganda in our area comes through Mayor Hall. He lives in Tellico Plains. That place is miles from the river. He is always talking about the mud flats. Mayor Hall wants the river dammed.

Sir, I brought you some pictures of the beautiful river, and I would like for you to see them.

Mrs. RITCHEY. There is so much there to save by not making any amendments to exempt TVA from this law. The law—endangered species—does work, it will work, and you would be surprised just what you would be saving because what you would be saving is of much more value than anything that that dam could create for that area. The industrial sites are already there. But it is as if—TVA's propaganda mill runs 24 hours a day, and they put out these little gems, of how many houses, electricity, it is going to serve, and that is in the cold times when we are needing all that heat. And then they are always saying look what that little old minnow is doing, holding up all these jobs. All these men are not going to have any work. That could be furthestest from the truth because every little town and county has dry land industrial parks, water industrial parks along the rivers, just begging to be filled.

Loudon is developing one across the river from where my mother lived. The sites are there just waiting to be filled.

I will tell you about good old Mother Nature. After they cut all the trees along the banks, which was very sad to have to witness, and we listened to them as they fell because we lived right up on the hill above Fork Creek, but Mother Nature is bringing back a new crop now. You can see in there along the river's edge where they have clear cut along the river. They are in the real estate business. They have an office, TVA has an office to rent this land from 1 to 5 years—located in Athens, Tenn.

Land is rented to highest bidder. If they could get rid of us—our family—that is what they do, they would tear down our buildings, rent it to some other farmer.

Mr. LEGGETT. This 23,000 acres that you had—

Mrs. RITCHEY. We only have 119, but we live in that 22,000 plus acre range that they took above the waterline.

Mr. LEGGETT. So they took your whole 119 acres?

Mrs. RITCHEY. Right, sir.

Mr. LEGGETT. How much did they pay you for it?

Mrs. RITCHEY. There was a separate thing. We have some woodland as well as cropland that are very valuable. One TVA appraisal put \$450 an acre, when TVA's forester put the value of the trees at \$350, just the value of the trees. So when we went to our trial, we asked if we could cut the trees? No, they cannot be separated from the land we were told. It is being done all the time. But TVA just treats you as if you were dirt. And who are you to stand up to us?

They have such a political clout, and I do not think they tell you all, everything about the area or what is going on there.

Mr. LEGGETT. But they bought you out some years ago?

Mrs. RITCHEY. We were condemned in 1974. We were visited several times—we never allowed them to come on our place voluntarily. We told them they could come to the waterline. Our land was not for sale. TVA wanted it all. TVA brought the marshals down in 1975, accompanied them on their appraisal. There were two TVA appraisers, three so-called independent appraisers that were hired by them who were witnesses at our trial. The three-man Commission was made up of a retired businessman, a man that sold real estate in Knoxville, did not know anything about farming, and another man who was a lawyer in Knoxville that does not have—that does not handle cases having to do with farming. He does cases that pertains to towns and cities and things of that nature.

Mr. LEGGETT. Thank you very much.

Mr. BONIOR. Could I ask some questions?

Mr. LEGGETT. Mr. Bonior.

Mr. BONIOR. Could you tell us a little bit, Mrs. Ritchey, about your land and about the agriculture in the region, the 22,000 acres?

Mrs. RITCHEY. It is very good land. It has a good depth and part of it is river bottom, and part of it, some of it is No. 1, 2, and 3 rated land, and 1, 2, 3, and 4 depends upon the topography, you know. One is very level, and two—slightly rolling and so on—but in those categories there are all types of soil, Fullerton, is one and they have different names. That is the only thing that TVA will not argue with you when you go to court. There is a little soil book that comes out listing types and nature of all of Loudon County's soil. Each field has what is in there, the type of soil and what it will grow best.

Mr. BONIOR. What is it growing?

Mrs. RITCHEY. On our place?

Mr. BONIOR. Generally.

Mrs. RITCHEY. We grow wheat, soybeans, corn, tobacco, oats, grass, and it is especially good for growing grass, it grows voluntarily there. It is just tremendously rich, good soil, good natured soil.

Mr. BONIOR. Do you know, or maybe Mr. Plater knows the economic impact of those 22,000 acres being taken out of agriculture?

Mrs. RITCHEY. Do you mean the value, the economic value?

Mr. BONIOR. Yes.

Mrs. RITCHEY. To me now, I would not know the total value of it all, just being a farmer myself, but I do know it is very valuable

and it grows good crops because we get from 50 to 60 bushels of wheat per acre. We get 80 bushels on oats, and around 100 on corn.

Mr. PLATER. Mr. Burgner will be testifying later on what the chairman was asking—how do you get dollars and cents figures on agriculture. I think he will be able to do that.

Mr. BONIOR. Thank you.

Mr. LEGGETT. Is 50 bushels of wheat pretty good, Mr. Bonior?

Mr. BONIOR. I do not know anything about wheat.

Mr. LEGGETT. Very good.

Let us hear from Mrs. Beulah Davis.

[The following was received for the record.]

#### STATEMENT OF JEAN RITCHEY

My name is Jean Ritchey. My husband, our children, and I live in Loudon County, Tenn., along Fork Creek, which flows into the Little "T" about one-fourth of a mile from where we live. We live and farm on some of the 22,000 plus acres taken by TVA for the Tellico project. Only about one to three acres of our property would be affected by a reservoir but TVA insisted on taking all of our 119 acres.

TVA's methods and efforts to obtain our place were questionable. We tried to find out just what they wanted with all of our land, when so little of it would be covered by back water. We wrote to Senator Brock to ask him if he could help us find out the reason. His reply, by way of Red Wagner, was that Congress had given TVA the right to take the 22,000 plus acres over and above the 16,500 acres to be covered by water to resell by them and help finance the total cost of the project. We told the appraisers who contacted us they were free to appraise to the water line but the remainder of our place was not for sale.

We were first approached by TVA in March 1969. After three brief stops we were not bothered by them for 5 years. In the Spring of 1974, two different men came. They told us that the higher-ups did not tell them what TVA wanted with all the extra land. My husband offered to give TVA the acres that would be covered by water just to go on and leave us alone. After several visits on their part, TVA slapped condemnation papers on us in December 1974, stating their taking of us by the right of eminent domain was for the building and maintenance of the Tellico Dam and Reservoir. Since we live miles from the dam, that omitted that part, and as the reservoir affects less than three acres, why all of our place? The question still remains—why are we being taken? This question has not been answered to this day. After all kinds of phony appraisals by their men and three so-called independent appraisers hired and paid by TVA, an on-site observation and inspection by their chief land acquisition lawyer, B. Burbage, and the three-man commission picked by Judge Taylor to hear our case instead of a jury occurred. Judge Taylor does not permit people in our situation the right of trial by jury, although folks in similar circumstances in the Greenville district and around Chattanooga are allowed jury trials. Because we always said "no" to a voluntary appraisal by TVA above the water line, they brought several U.S. Marshalls with them to the forced appraisal. The farce of a trial was held in May, 1976. It lasted for 2 days. Two days of lying by their witnesses, of TVA questioning our integrity and calling us incompetent, and trying to show off their authority and trying to make us feel insignificant, and they handled themselves with such an air of superiority as if to say, "just who do you think you are to stand up to us?"

TVA has treated the whole area as if it was their own private playpen to overhaul and maul as they saw fit, and be damned to anything or anybody that stood up to them or questioned their ways.

Congress needs to take a long, hard, in-depth look at TVA; its management and its operation, because its original purposes have become distorted. Mr. Freeman seems to be trying to do something different, including citizen input, he is open to discussion. He inherited a real mess. Aside from asking Congress to funnel down the money for its projects, good or bad, TVA can and does pretty much as it pleases. Their political clout is enormous; it makes an observer like myself nervous at its implications, and amazed at what they get by with. They act as if the laws of the land somehow don't apply to them and were not created to cover their actions. In other words, a double standard of compliance exists—one way for private business and another way for TVA.

TVA's propaganda mill runs 24 hours a day, putting out little gems about what they are doing and have done down through the years. They also feed the news



media a pretty good line all the time, like how many homes the Tellico Dam Project will heat when the truth is there are no generating facilities for electricity at the dam and none are included in its design. Then there is always "look what that worthless little ole minnow of a snail darter is doing—holding up all that industrial development that is some miraculous way coming overnight like a swarm of locusts." The industrial sites are there now, lake or not. Every county and town has industrial parks—dry land ones and waterfront ones already available and begging to be filled.

Congressman John Duncan held three meetings in the area to hear the views of the citizens about the project. The first meeting was at Madisonville, Tenn., the second one at London, the third was held at Maryville-Alcoa on March 12, 1977. We attended all three and spoke briefly at two of them. John Duncan made the observation that a majority were for the dam and lake. My daughter kept track of the speakers pro and con at the Maryville-Alcoa meeting. Seventeen spoke in favor and twenty spoke against. At the closing of the meeting, Rita Cantu sang a beautiful song she had written about the destruction of the beautiful river and the darter if the dam was closed and the area flooded. The press usually came and left hurriedly before the meeting was over, and their reporting reflected this. We know of at least one speaker who said he was asked to come to the London meeting and speak in favor of the project. So in a way, these meetings were manipulated by Mr. Duncan to try to make it appear that an overwhelming majority was for the dam, which is an untruth.

Most of TVA's support comes from the Tellico Plains-Madisonville area. If you have the opportunity, ask the mayor of Tellico Plains how much real estate he had taken from him at half its market value, and see what he says. He is always harping on the mud flats and I wonder where he is talking about. I have brought along some pictures I made of the river near where I live. The river is as beautiful as ever, clean and free from contamination (that is how and why the snail darter lives there so successfully). The river has been denuded along its banks of its once lovely old trees, but Mother Nature has already begun a new growth to adorn the river's banks again.

The value of this land is tremendous; the potential down through the years of helping to feed a hungry world is there as the soil is deep and very productive. To flood this wonderful asset would be unthinkable and totally irresponsible.

TVA now owns a block of several thousand acres of land—they lease this land from one to five years to the highest bidder. Lease payments have paid them enough in some instances to cover the price they paid originally for the land. So you see, the land owner is in a way as endangered as the small fish in the river; they won't be made extinct, maybe, but they will be so bent financially they cannot continue to farm. Some of these people I know have settled for a house and lot for the amount of money they received for their farms.

Since we were unable to replace ourselves at the prices they offered us for our land, we have not moved. We continue to farm and pay property taxes to London County even though TVA has removed our deed and tried to have us removed from the tax books of the county. We have not taken TVA's money offer. TVA sent us a letter in the fall of 1976 saying our electrical and phone service would be terminated and we had to vacate our place by December 21, 1976. January 1, 1977 came and went and there was no interruption of either service. You see, we don't buy electricity directly, but through the London utility district, whose business it is to serve its customers. The same goes for South Central Bell. As long as you pay your bill, you have a phone, and as one telephone man told me, "TVA doesn't run our business or tell us who to serve."

TVA's Tellico project is neither a power-producing project nor a major flood control one by their own admission. The industrial sites are there, lake or not. So it all boils down to one of the biggest land grabs of all time. Did Congress really consider this when they funded this obsolete undertaking? Did Congress consider the true value of the agricultural potential here, or were they told the truth? How about the historical and archeological values that stand to be destroyed, the Indian sites, their burial grounds, etc.

Please do not weaken the Endangered Species Act by allowing exemptions for this project. By complying with an act that was long overdue, you will be helping to save one of the area's most beautiful rivers. This act is worthwhile and positive; one that helps to save our animals and reminds us that God created man in His own image and then He created the lesser animals. And God told man to take care of them, not to destroy them. It is our responsibility to learn to live in such a way as to accommodate all the creatures of this earth as their existence is totally interwoven with man's existence here too.

Please don't break the Endangered Species Act's ability for its protection—it can work.

Think positively. The alternatives to the dam are many, and of more economic value to the area than this dam could ever be. Thank you.

#### STATEMENT OF MRS. BEULAH DAVIS

Mrs. DAVIS. I am testifying on behalf of my family. They were on the land for 100 years. My parents are here today, and I would like for them to stand so you can see them.

My great-grandfather bought a farm on the Little Tennessee River in 1872, and that land has been farmed continuously by my family until the Tellico project.

Mr. LEGGETT. How many acres?

Mrs. DAVIS. We own—my dad—owns two farms, one of 104 acres was taken in its entirety, even though only 35 acres would be flooded. Then we have 113 acres on a farm about a mile from the river, TVA has taken 38 acres of it. Even though it will not be flooded at all.

We are in the same situation that Mrs. Ritchey is in. We were very concerned, because from the beginning TVA said we are taking your land, and we will sell it to somebody else in a few years at a great deal more than we are going to give you for it.

Our land was first appraised by TVA in 1968 for \$298 an acre. It was not until 1971 that it was condemned and again, we are like Mrs. Ritchey, in that we were not permitted a jury trial. We went before a commission, and they finally awarded us \$410 an acre. But they cannot replace the land for that, and TVA has given us very little assistance in trying to replace the land.

A great deal of the fertile farmland in eastern Tennessee is under the water of our lakes. I think that that is something that we need to give great consideration to. Many of the farmers in the area who had to move, had already moved for other projects.

One of our neighbors is a dairy farmer. He is dead now, but my brother tells the story of hearing him say, "I moved for Norris Dam. I moved for Douglas Dam. This time I would rather die than see my farm go under floodwater."

Mr. LEGGETT. Do you understand that even if they adopted to sell back their lands for private farming, you have no preemptive rights to buy back your farm?

Mrs. DAVIS. We do not want to see the land destroyed, even if it is impossible for us to get ours back. I know that there are many other farm families along the river, I know many of them feel the same way.

[The following was received for the record:]

#### STATEMENT OF BEULAH DAVIS

I am testifying today as a representative of my family—my parents and my brothers. My dad is a semiretired farmer who owns two farms affected by the Tellico project. Dad had hoped to be able to maintain his cattle herd in order to supplement his social security income. This will be impossible if the Tellico Dam is filled. Dad can't replace his property for what TVA paid him, and he can't maintain his cattle on the 70 acres he will have left.

One of our primary concerns is that of the 142 acres that TVA is taking from us, only about 35 will be flooded. The rest will be sold by TVA at some time in the

future to industry or to residential developers—at a profit. To take our land away and then sell it to someone else seems extremely unjust. We believe this constitutes a serious abuse of the power of eminent domain.

A great proportion of the most fertile land in East Tennessee now lies under the flood waters of TVA lakes. A number of farmers who were forced out by TVA for other dams came to the fertile valley of the Little Tennessee only to be driven away there too. A good example of this is a former neighbor of ours, Mr. I. M. Denton, a dairy farmer who moved for Norris Dam and again for Douglas Dam. Mr. Denton died after TVA appraised his land for Tellico Dam.

The Tellico project has been controversial from the beginning. The people in the project area have been divided in opinion. Many questioned why a dam was necessary. Others swallowed TVA's line that the project would mean jobs and prosperity. Many were and still are ignorant of what is really at stake. Judy Millsaps, who is the librarian at Loudon Elementary School, and her husband Homer, who is a farmer, changed their minds about the Tellico Project after seeing the fertile bottomland which would be flooded. Judy and Homer now feel, as do many others, that the river and the land should be preserved for future generations.

The Tellico Dam project was proposed by bureaucrats who want to build dams when dams are no longer the solution. TVA is now willing to consider alternative plans which do not include a dam and lake. It would be extremely short-sighted of Congress to insist on a dam that is going to be so destructive when alternative measures can bring better results. There is much to be gained by not damming the Little Tennessee.

Mr. LEGGETT. Now, we have James Durham, the Chairman of the International Indian Treaty Council.

Mr. DURHAM?

#### STATEMENT OF JAMES DURHAM

Mr. DURHAM. Thank you, Mr. Chairman.

I should say a little word about the Treaty Council, perhaps. It was founded in 1974, and now has consultative status with the United Nations where I work. We are the largest Indian Nation in the Hemisphere. They number 15 American countries. We have a coalition with virtually every Indian Nation in the State.

I am here officially speaking for the Treaty Council, and also personally, for myself, the executive director of the National Indian Youth Council is also a Cherokee Indian, and also has asked me to speak on their behalf as director of the Youth Council.

I would like to submit to the committee a map made in 1762, of the old Cherokee country in that valley. The Tellico Valley. You may notice that this map is signed, besides the Government representatives, our Government representatives, Principal Chief Attakullakulla, who is our first Ambassador before the United States was in existence.

Mr. LEGGETT. We will accept that map and include it in our record.

[The following was received for the record:]



Mr. DURHAM. Tsi Yunwiyah. I am a Cherokee. In the language of my people, Ani Yunwiyah, or Cherokee as we are called, there is a word for land: Eloheh. This same word also means history, culture, and religion. We cannot separate our place on the Earth from our lives on the Earth nor from our vision and our meaning as a people. We are taught from childhood that the animals and even the trees and plants that we share a place with are our brothers and sisters.

So, when we speak of land, we are not speaking of property, territory, or even a piece of ground upon which our houses sit, and our crops are grown, we are speaking of something truly sacred.

Is there a people anywhere in the world that does not revere its homeland? Is there a human being who does not revere his homeland, even if he may not return? We say that reverence is a great human characteristic. We say that reverence for ancestral lands, no matter how insignificant in our own daily affairs or how far from our home, is vitally important to the whole of humanity.

The Cherokee people lived for thousands of years in what is now Tennessee, Georgia, and Carolina. In our own history, we teach that we were created there, which is truer than anthropological truth, because it was there that we were given our vision as the Cherokee people. But, President Jackson illegally drove us out of that land, from Echota, the center of our world.

There is no Cherokee alive who does not remember that Trail of Tears, who does not remember and revere that sacred land and Echota.

Today the Tennessee Valley Authority plans to flood the sacred valley that held our two principal cities, Echota and Tenasi, after which the State is named. The Tellico project would destroy an area of great religious importance, many settlement sites, cemeteries, rich farmlands, forests, and the river itself. This is an unneeded dam which can, at the whimsy of TVA, wipe out thousands of years of history of a great and currently oppressed people.

To do so will be an insult not only to the Cherokee, but to all the people in the United States, and to all humanity. Yes, I am proud enough to state that the history and vision of my people are important to humanity.

I want to speak to my children and my grandchildren about Echota, and I want them to be able to go there and listen to their ancestors. The anthropologists have dug up some bones and some pottery at Echota and TVA tells us that we can visit those bones at a museum.

But the spirits of our ancestors are not in a museum. They live in the pine and hickory and walnut trees and in those free running creeks and rivers.

I will never live at Echota, anymore than a Greek in New Jersey will ever live at the Parthenon, but the hearts of our people say it must be there.

The fact that there is no stone monument or large ruins at Echota is itself a monument. Our reverence for the land and its life maintained it in an unspoiled state for those thousands of years. Maybe someone will think I am being too emotional, but there must come a time when the American Government and the Ameri-

can people can be emotional about the destruction of land and of sacred things.

The flooding of our old valley has been stopped temporarily because of a little fish that lives there and nowhere else. I have seen Griffin Bell, the New York Times, and a national television network make fun of this little fish, and I would like to ask why it is considered so humorously insignificant. Because it is little, or because it is a fish?

It is this incredible arrogance toward other life that has caused such destruction in this country. Who is Griffin Bell or the U.S. Government to play God and judge the life or death of an entire species of fellow-being which was put here by the same power that put us here? Who has the right to destroy a species of life, and what can assuming that right mean?

Let me be emotional. To me, that fish is not just an abstract "endangered species," although it is that. It is a Cherokee fish and I am its brother. Somehow it has acted to save my holy land, so I have a strong gratitude for that fish.

The Cherokee people in Tennessee, Oklahoma, the Carolinas, Georgia, and wherever we might be, are of one voice, and of one mind, that this dam, this degradation be stopped. We want our universe, our Eloheh, with all of its fish and all of its life to continue. And we are sure that this cannot be against the interests and wishes of the American people.

Thank you.

Mr. LEGGETT. Mr. Forsythe?

Mr. FORSYTHE. Mr. Durham, on the map which you showed us, which is very, very interesting, what part of that valley will be flooded by the Tellico Dam?

Mr. DURHAM. Most of the flooding that we are concerned with is over the city that is on the map, called Chota, the Metropolis.

Mr. FORSYTHE. That has not been flooded at this time?

Mr. DURHAM. That has not been flooded.

Mr. PLATER. The area of the entire map in front of you would be under water if the dam would be closed. Chota is the heart of it.

Mr. LEGGETT. Is this dam on the Tellico River?

Mr. PLATER. No, sir; it is downstream, below the bottom of the map.

Mr. LEGGETT. Is there not a dam at Fort Loudon at the present time?

Mr. PLATER. Yes, sir, but that is not on the map.

Mr. LEGGETT. Is Fort Loudon going to be flooded out, too?

Mr. PLATER. For Loudon itself stands far from the Fort Loudon Dam.

Mr. FORSYTHE. That is very helpful.

Mr. PLATER. Doctor Chapman, who will be testifying later, will take Mr. Durham's map and relate it to a large map.

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. Let us have our next group of witnesses.

Mr. PLATER. We have Mr. Burgner, who will supply the agricultural dollar figures that you were discussing, Mr. Chairman.

Also, Doctor William Russell of the Oak Ridge National Laboratory; Ms. Laura Hill King of the Eastern Band of Cherokee; and Mr. David Cox of Trout Unlimited.

Mr. BONIOR. Mr. Chairman?

Mr. LEGGETT. Mr. Bonior.

Mr. BONIOR. Mr. Chairman, I would like to make a comment on Mr. Durham's statement. I very rarely will follow the testimony of witnesses, but I think the statement is rational, laudible, sensible and very peaceful, and I only wish that if it were at all possible, that Mr. Durham and Mrs. Ritchey could have the ear of the Members of the Congress, and we could take them to the floor, as we will probably have to, to defend this bill, and this amendment process on the floor.

It is unusual to have someone put, I think, perspective, the historical significance of lands, and I want to compliment Mr. Durham and Mrs. Ritchey for their eloquence. [Applause.]

Mr. LEGGETT. First, we have Mr. Daniel Burgner.

#### STATEMENT OF DANIEL BURGNER

Mr. BURGNER. My name is Daniel Burgner.

Mr. LEGGETT. And your business is what, Mr. Burgner?

Mr. BURGNER. I am a dairy farmer, tobacco farmer.

Mr. LEGGETT. You are in this valley, too?

Mr. BURGNER. No, I am not.

I am a landowner and a dairy farmer from Greene County, Tenn. I have a bachelor of science degree in agricultural engineering from Clemson University, Clemson, S.C. My work experience began when I raised my first tobacco crop at age 13. My nonfarm work experience consists of working as an industrial engineer for the P. R. Mallory & Co. of Indianapolis, Ind.

I am also the president of the East Tennessee Valley Landowners Association.

As a farmer, I am concerned with the needless inundation of prime farmland. As a landowner, I am highly disturbed that TVA has entered the real estate business, utilizing its power of eminent domain to acquire land for no other purpose than to resell it at a profit.

TVA claims annual benefits of this 38,000-acre project at \$3.25 million according to the GAO while admitting that a 25,500-acre portion could yield \$6.4 million. This \$6.4 million is conservative for two reasons: (1) It represents an average of only \$253 per acre on 25,500 acres of the best land, and (2) the full 38,000 acres is not considered.

Considering my own operation, as an example, I can begin to give you a rough idea as to the annual output of farmland in the Tellico project area. Of 205 acres in my operation, 171 acres is in cropland and pasture, and 34 acres is in woodland and miscellaneous.

In 1976, my 171 productive acres yielded \$60,000 worth of milk and tobacco, and in 1977, yielded \$50,000. The average annual yield over these 2 years comes to \$320 an acre. Projecting this \$320 per acre figure over the entire 38,000 acres, we come out with a figure of \$12.2 million. You may ask, "Is this a fair comparison?" My answer would have to be, "No," for two reasons.

(1) Presently, due to marketing conditions my operation is operating at approximately one-half to two-thirds of its capacity, so Tellico could yield more.

(2) The Tellico project land is of much higher quality. Of the 38,000 acres involved, 15,500 are in classes I and II, which is the highest quality farmland available with top soils running to a depth of 15 feet or more. Ten thousand acres in class III, and 12,500 in class IV and above, where as my own operation has no class I land, less than 10 acres is in class II, and the remainder is in classes III, IV, and VI.

With favorable marketing conditions at current prices, I would expect the classes I and II land along the "Little T" to yield not less than \$1,300 per acre as a dairy operation, not less than \$2,200 per acre as a tobacco operation, and lot less than \$4,500 per acre as a staked tomato operation.

Mr. LEGGETT. This \$6.4 million, that according to GAO, admitting 25,500 portion could yield \$6.4 million, is that gross or net?

Mr. BURGNER. That is gross.

Mr. LEGGETT. And the project benefits of 3.25 million, is that gross or net?

Mr. BURGNER. That is gross, yes, sir.

Mr. LEGGETT. So we need the net off of both of those figures to make them comparable?

Mr. BURGNER. They are both gross.

Mr. LEGGETT. It does not make a difference what your gross is if you are losing money.

Mr. BURGNER. You consider the economic activity that it creates. In this case it would be gross.

Although, because tobacco and staked tomatoes are labor-intensive crops, no one person, of course, would undertake raising 25,500 acres of either. On the other hand, I can imagine dairy operations, at one cow per acre, ranging in size from 40 cows to 1,000 cows, giving an annual output of \$33 million for the classes I, II, and III farmland; \$33 million is simply the 25,500 times \$1,300.

For the land in classes IV and above, I could imagine an annual output of \$320 per acre using my own operation as an example for an additional \$4 million.

Therefore, as a working farmer, I would say that the 38,000 acres in full agricultural production could produce as much as \$37 million.

People ask me, "What is the snail darter worth?" My only answer is, as Congressman Jerry Litton would have said, "In relation to what?" I figure it is worth a \$37 million a year industry.

Thank you.

Mr. LEGGETT. You say \$29 million?

Mr. BURGNER. Yes, that was an error in calculation.

Mr. LEGGETT. \$37 million?

Mr. BURGNER. \$37 million total.

Mr. LEGGETT. Do you have any figures on what the valley is currently producing?

Mr. BURGNER. TVA, in 1964, claimed the actual output in 1964-65, somewhere in that period, was \$1.9 million. That is what it actually produced.

Mr. LEGGETT. Do you have any estimates of what it is currently producing?

Mr. BURGNER. I have no idea, because we do not know how much of it is actually in operation at this time.



Mr. LEGGETT. You do not know what the leases or agreements are?

Mr. BURGNER. TVA leases the land in the project area, ranging from \$5 an acre to as much, I think, I think they charge \$100 an acre, depending on what it is used for. They will charge \$5 an acre a year for pasturing cattle, and \$100 an acre for growing tobacco, which of course is a high-value cash crop.

Mr. LEGGETT. Of course, that is under allotment.

Mr. BURGNER. Yes, sir.

Mr. LEGGETT. How much allotted tobacco do you have in this area?

Mr. BURGNER. Well, of course, I do not know the total in Monroe County, but here again, my own operation, I have 205 total acres. I have 15,000 pounds allotted, that, at an average yield, would be 6 or 7 acres.

Mr. LEGGETT. Thank you very much.

[The following was received:]

GREENVILLE, TENN., June 24, 1978.

Congressman ROBERT LEGGETT,  
Subcommittee of Fisheries, Wildlife Conservation, and the Environment,  
Washington, D.C.

DEAR SIR: I would like to add the following remarks to my testimony given to your subcommittee on June 20, 1978 concerning Tellico Dam and the snail darter.

(1) As to the 1964 agricultural output of the Little Tenn. Valley of \$1.9 million, I should point out that the Tellico Project has been on the drawing boards since 1936. The people of that Valley knew that, sooner or later, Tellico Dam was to be. No one in his right mind is going to operate his farm to its fullest, knowing that TVA will ultimately take it from him.

(2) Nowhere, in the GAO report or otherwise, do I find how the \$1.9 million 1964 agricultural output was figured into the benefit-cost analysis. Perhaps it was not included. In this case, by subtracting the \$1.9 million from the \$3.25 million, or so, Tellico Project benefits, it can be shown that the Tellico Project never had a benefit-cost ratio greater than one.

As to the power benefits of the Tellico Project, TVA has shut down two hydroelectric projects which, together, can out-produce Tellico Dam. Ocoee #2 at 21,000 Kilowatts was closed in 1976 and is currently being utilized as a white-water recreation area and Nolichucky at 10,640 Kilowatts was closed in 1972 and turned into a duck pond.

As to flood control benefits, TVA in 1972, eliminated 1.7 million acre-feet in 13 reservoirs upstream from Chattanooga. 1.7 million acre-feet is 13 times the 126,000 acre-feet storage capacity Tellico will provide. TVA claims that Tellico would have lowered the flood level in Chattanooga by two feet during the St. Patrick's Day 1973 flood. Assuming that TVA's formula of two feet for each 126,000 acre-feet is correct, it can be easily calculated that 1.7 million acre-feet would have lowered the 1973 flood crest in Chattanooga by 26 feet.

Thank you,

DANIEL BURGNER.

Mr. LEGGETT. Next we have Dr. William Russell.

#### STATEMENT OF DR. WILLIAM RUSSELL

Dr. RUSSELL. Thank you, Mr. Chairman, for the opportunity—

Mr. LEGGETT. From the Oak Ridge National Laboratory.

Dr. RUSSELL. Yes; I am a biologist by profession, now retired after 30 years of work leading a research program in genetics. The purpose of this research was to prevent the human race from becoming an endangered species, or, in less extreme terms, to protect our descendants from becoming seriously damaged as a result of the genetic effects of radiation.

I am testifying on behalf of the Little Tennessee River Alliance. The alliance is a coalition of many organizations, with several thousand members. I will not trouble you with the list of organizations. It is in my written statement.

The alliance was formed in early 1977, after the Sixth Circuit Court of Appeals ruled that TVA must halt all work on its Tellico project, because it would violate the Endangered Species Act. The purpose of the alliance was to try to find a positive, constructive solution to this conflict between TVA and the law.

Last year the alliance made two recommendations. The first was based on the view of the alliance that a well-planned agricultural, tourist, and industrial development, without the dam, might prove more economically sound, as well as far less environmentally destructive, than the reservoir project.

Accordingly, the alliance recommended that Congress approve a study of such alternatives. As you well know, members of your committee did approve two such studies, and it is gratifying to know that the conclusions reached in both studies indicate that the alliance's constructive suggestions may really be viable alternatives.

You suggested today, Mr. Chairman, that they did not adequately cover the economic side, but a third study now being conducted by TVA will give you that information.

The second recommendation was that if the alternatives to closing the dam do prove viable, then, and I would like to quote directly from a short statement made last year in testimony before the Senate:

TVA would have a golden opportunity, having already acquired the land, to fulfill its mission for the welfare of the people by showing what it could do with an imaginative multipurpose development associated with a river instead of a reservoir.

I must admit that, a year ago, we considered that statement as nothing more than a wild hope. Now it appears that this impossible dream may be coming true. From a situation where the TVA Board of Directors would not even discuss alternatives with the Department of the Interior, we have progressed, thanks to President Carter's appointment of a new Chairman, to a point where the newspaper headlines are proclaiming TVA's new flexibility and responsiveness regarding alternatives to closing the dam.

TVA has suddenly become flexible and responsive, and with the results of its preliminary studies indicating that the projects might be economically superior, without the closing of the dam, and with Tennessee already saturated with reservoirs—more shoreline than that of all the Great Lakes combined—why is there still a conflict? That there still is a conflict is demonstrated by the statements of some Tennessee Congressmen after the Supreme Court decision.

A question on which we wish to comment is, therefore: Why, in the face of the facts that have been presented today, are some Tennessee Congressmen still arguing for the closure of the Tellico Dam?

They are undoubtedly being pressured by some of their constituents. Perhaps the dam promoters in their constituencies are being vociferous because of the past largess Tennessee has received in Federal support of water projects.

Unlike the Corps of Engineers, TVA is in the unique position of not having to have its projects authorized by Congress before they are funded. So Tennessee has received a very good share of the Federal pie for water projects, and, as a result, Tennesseans who favor Federal handouts for dams are spoiled. That makes it difficult for current Congressmen to satisfy them.

There is also the problem of communicating a complex subject fairly to the public, to the constituents of our Congressmen. Unfortunately, the issue is currently being simplified into the little fish versus the dam, on which more than \$100 million is claimed to have already been spent.

The fish is usually shown alongside a paper clip, a nickel, or a similar object, to show how tiny it is. Our friends, the Cherokees, have touched on this subject today. The dam proponents are never pictured next to a basking shark, to show how small they really are, compared to some of their fellow vertebrates. That does not mean that they are insignificant or unimportant.

As a biologist, I have great respect for all forms of life, including large sharks, small dam proponents, and tiny snail darters.

There is too little mention in the media of this project not having been justifiable from the beginning, and that most of the cost is retrievable.

The Little Tennessee River Alliance respectfully urges the Tennessee delegation in Congress to take a careful look at the recently completed studies on the Tellico project, the ones that your committee sponsored or suggested. Perhaps they will agree with the conclusion that the best economic interests of the people might be served by not closing the dam.

We also request that they keep an open mind regarding the new study initiated by TVA and the Department of Interior, and that they not rush into amendments on the Endangered Species Act, or push any new legislation on Tellico, until this study is completed.

I should like to end with one final comment to the committee.

The alliance agrees with others who have testified in defense of the Endangered Species Act on the grounds that the firmness of section 7 pressures the agencies to find ways to resolve the problems that arise.

Also, we have heard that most of the problems have already been solved. On the other hand, an amendment weakening section 7 would seem to condone the past intransigence of TVA. With the TVA problem now apparently resolved, and with that being only a rare conflict among hundreds of cases that presented no difficult problems, we strongly recommend that the Endangered Species Act be reauthorized with no weakening changes.

Thank you.

[The following was received for the record:]

STATEMENT OF WILLIAM L. RUSSELL, FOR THE LITTLE TENNESSEE RIVER ALLIANCE

Mr. Chairman and distinguished members of this Committee, my name is William L. Russell, and I sincerely appreciate this opportunity to make a statement on the Endangered Species Act and the Tennessee Valley Authority's Tellico Project on the Little Tennessee River.

I am a biologist by profession, now retired after 30 years' work at the Oak Ridge National Laboratory leading a research program in genetics. The purpose of this research was to prevent the human race from becoming an endangered species, or,

in less extreme terms, to protect our descendants from becoming seriously damaged as a result of the genetic effects of radiation. In my professional capacity I applaud the Endangered Species Act.

This century will undoubtedly be known as the one in which the extinction of species as a result of human activities escalated to a steep exponential curve. If we are wise, this century could also be known as the time when man first took firm steps to control this destruction of the diversity of life on our planet. The Endangered Species Act was a wise move that should remain firm and unweakened. The profound importance of this legislation can be emphasized by the use of a time scale based on one quoted in the June 24, 1977 issue of "Science," the publication of the American Association for the Advancement of Science. If the whole history of the planet Earth is represented by a time span of one year, then conditions suitable for life have existed for approximately the latter half of that year. The oldest known fossils were living creatures around mid-October. In December, the fish, including the ancestors of the snail darter, began their difficult evolution toward man by starting to climb out of the water. Mammals finally appeared in large numbers shortly before Christmas, and man emerged at 5 minutes before midnight on New Year's Eve. The period since 1600 A.D., when man caused the extinction of the Dodo, amounts to three seconds on our time scale, and the last 25 years when the disappearance of species really began to escalate, represents only one sixth of a second—a blinking of an eye in evolutionary time. In the last quarter of a century we have destroyed, forever, many organisms in the complex pattern of life that took approximately 100 million times as long to evolve. In this context, the Endangered Species Act is indeed timely and important.

I am testifying today on behalf of the Little Tennessee River Alliance. I am a member of the Board of Directors of one of the organizations belonging to this Alliance. The Alliance is a coalition of many organizations. It includes the Tennessee Conservation League (which is the oldest large conservation organization in Tennessee, and the one officially affiliated with the National Wildlife Federation). Other members of the Alliance are the Tennessee Endangered Species Committee, the Sierra Club, the Eastern Band of the Cherokee Nation, Smoky Mountain Hiking Club, Tennessee Audubon Council, Trout Unlimited, Tennessee Citizens for Wilderness Planning, Tennessee Environmental Council and the Tennessee Outdoor Writers' Association.

The Alliance was formed in early 1977 after the 6th Circuit Court of Appeals ruled that TVA must halt all work on its Tellico Project, because it would violate the Endangered Species Act. The purpose of the Alliance was to try to find a positive, constructive solution to this conflict between TVA and the law. For years many of the conservation organizations had felt that the Tellico Dam was not justified economically or environmentally. Bringing the views of the various groups together, the Alliance concluded that many of the benefits of the Tellico Project, plus additional ones, could be achieved without the dam and reservoir. A preliminary investigation by the Alliance indicated that it was highly likely that, even at that late date, a modification of the project that would avoid closing the dam might not be an economic loss.

Eleven months ago, I spoke, on behalf of the Alliance, before the Senate Committee on Environment and Public Works. Looking back at that testimony, I think we can boast that our track record looks pretty good. At that time we made two main recommendations. One of them has definitely materialized, and the other appears to be on the horizon.

The first recommendation was based on the view of the Alliance that a well-planned agricultural, tourist and industrial development, without the dam, might prove more economically sound, as well as far less environmentally destructive, than the reservoir project. Accordingly, the Alliance recommended that Congress approve a study of such alternatives. As you well know, members of your Committee did approve two such studies. It is gratifying to know that the conclusions reached in both studies indicate that the Alliance's constructive suggestions may really be viable alternatives.

Our second recommendation was that if the alternatives to closing the dam do prove viable, then, and I quote directly from last year's testimony, "TVA would have a golden opportunity, having already acquired the land, to fulfill its mission for the welfare of the people by showing what it could do with an imaginative multipurpose development associated with a river instead of a reservoir.

We hope that TVA will still see it this way, that it will take this bold shift in direction that will, at the same time, resolve the conflict with the Endangered Species Act."

I must admit that, a year ago, we considered that statement as nothing more than a wild hope. Now it appears that this impossible dream may be coming true. From a situation where the TVA Board of Directors would not even discuss alternatives with the Department of the Interior, we have progressed, thanks to President Carter's appointment of a new Chairman, to a point where the newspaper headlines are proclaiming TVA's new flexibility and responsiveness regarding alternatives to closing the dam.

I should now like to comment on some of the questions raised by the conflict of interests.

The first question is: Is closing the dam important enough to warrant an amendment to the Endangered Species Act? The answer should be an emphatic "No!" The recent unbiased, independent studies seem to support what environmentalists have claimed all along, namely, that, from the beginning, the Tellico Dam never was economically justifiable. Even after more than 43 millions of dollars had been spent on it, Governor Dunn of Tennessee maintained his opposition to it and his repeated requests that the project be terminated. Finally, even now, after the concrete portion of the dam has been completed, the recent authoritative studies show that the benefits may be greater if an alternative to closing the dam is pursued.

The second question is: Even if the Tellico Dam were economically justifiable in itself, would it still be justifiable in terms of the balance of factors necessary in a sensible water resource policy? Again the answer is "No!" In the Tennessee Valley, the desirable balance of reservoirs versus rivers has already been greatly exceeded. The reservoir shoreline is greater than that of all the Great Lakes combined. There is not a single large tributary of the Tennessee river, or a single large river in the state of Tennessee, that is still free flowing. Even the hydrologists complain that they do not have a large river left for their base-line studies on natural water flow. Vast acreages of valuable farm land have been put under water. Large areas have been permanently flooded to protect much smaller flood plains downstream that should never have been built on in the first place and could have been evacuated. Tennessee does not need the Tellico Reservoir.

The third question is: Why are we faced with a conflict that endangers the Endangered Species Act? The main cause of this conflict is the past inflexibility, intransigence and even bad faith of TVA. When Governor Dunn of Tennessee concluded that the interests of the state would be best served if TVA discontinued plans to impound the Little Tennessee River, TVA ignored him. Even the powerful Corps of Engineers accedes to a Governor's wishes. After the passage of the National Environmental Policy Act, TVA had to be taken to court before it would comply with the law by providing an environmental Impact Statement on the Tellico project. Even then, as the recent studies show, it was not a "good-faith" statement. Since then, there has been the long history of attempts by TVA to avoid or circumvent the provisions of the Endangered Species Act, ending in TVA wasting everybody's time and money by taking a bad case to the Supreme Court.

Throughout this sorry series of events, TVA has fed the public with misleading propaganda. You are familiar with the recent speeches, illustrated with a jar of pickled snail darter, implying that this insignificant little creature is the only thing stopping the public from receiving magnificent benefits. You are perhaps not aware of what TVA Chairman Wagner was saying at the time when Governor Dunn, representing the whole state of Tennessee, was asking him to stop the Tellico project. He had the effrontery to state that the only opposition came from a small but vocal group. Earlier still, when the farmers and other land owners who were to be evicted were protesting, TVA diverted attention from this by claiming that the opposition came from a small band of fishermen. There is perhaps some poetic justice in the fact that the final successful protest came on account of a band of small fish.

TVA's intransigence was by no means limited to the Tellico project. For example, on the day he retired, Mr. Wagner reaffirmed his long refusal to accept an agreement with the Environmental Protection Agency that would help rectify TVA's position as the worst air polluter of all the nation's electric utilities.

TVA's inflexibility, its unwillingness even to discuss alternatives to the Tellico dam, has, then, been the main reason for the conflict with the Endangered Species Act. Having made that point, we should not harp any more on TVA's past faults, especially since TVA is now under a new and very different chairman.

With the TVA suddenly becoming flexible and responsive, with its acceptance of the possibility that the project might be economically superior without the closing of the dam, and with Tennessee already saturated with reservoirs, why is there still a conflict? That there still is a conflict is demonstrated by the statements of some Tennessee Congressmen after the Supreme Court decision. The last question on

which we wish to comment is, therefore: Why, in the face of the above facts, are some Tennessee Congressmen still arguing for the closure of the Tellico dam?

They are undoubtedly being pressured by some of their constituents. Perhaps the dam promoters in their constituencies are being vociferous because of the past largess Tennessee has received in federal support of water projects. Unlike the Corps of Engineers, TVA is in the unique position of not having to have its projects authorized by Congress before they are funded. For years, Tennessee's Joe L. Evins was in the powerful position of Chairman of the Public Works Subcommittee of the Appropriations Committee. These two factors led to Tennessee receiving a good share of the federal pie for water projects, and, as the later projects became less justifiable, also a large hunk from the pork barrel. As a result, Tennesseans who favor federal handouts for dams are spoiled. That makes it difficult for current Congressmen to satisfy them.

There is also the problem of communicating a complex subject fairly to the public. The pro-dam agencies and some of their supporters have information offices, speech writers, and so on. The pro-river people do not. The news media are consequently bombarded with statements on one side of the issue. Unfortunately, the issue is currently being simplified into the little fish versus the dam on which more than \$100 million is claimed to have already been spent. There is too little mention of this project not having been justifiable from the beginning, that only a small portion of the \$100 million spent was for the dam itself, that most of the cost is retrievable, and that a project which avoids the closing of the dam might be economically sounder and in the better interests of the people.

The fish is usually shown alongside a paper clip, a nickel, or similar object to show how tiny it is. Dam proponents are never pictured next to a basking shark to show how small they really are compared to some of their fellow vertebrates. That doesn't mean they are insignificant or unimportant. As a biologist I have great respect for all forms of life, including large sharks, small dam proponents, and tiny snail darters.

I watched four television news programs, two network and two local, after the Supreme Court decision on Tellico was announced. In none of them was there an interview with the attorney who won the case. On the other hand, there were interviews not only with the Congressman in whose district the project lies, but also with a Tennessee Congressman from another district, both still supporting the closing of the dam.

The Little Tennessee River Alliance respectfully urges the Tennessee delegation in Congress to take a careful look at the recently completed studies on the Tellico project. Perhaps they will agree with the conclusion that the best economic interests of the people might be served by not closing the dam.

We also request that they keep an open mind regarding the new study initiated by TVA and the Department of Interior, and that they not rush into amendments on the Endangered Species Act or push any new legislation on Tellico until this study is completed. Encouraged by the miraculous turnaround in TVA's position since last year, we are hopeful that this year's request will also happen to be granted.

I should like to end with one final comment to the Committee. The Alliance agrees with others who have testified in defense of the Endangered Species Act on the grounds that the firmness of Section 7 pressures the agencies to find ways to resolve the problems that arise. On the other hand, an amendment weakening Section 7 would seem to condone the past intransigence of TVA. With the TVA problem now apparently resolved, and with that being only a rare conflict amongst hundreds of cases that presented no difficult problems, we strongly recommend that the Endangered Species Act be reauthorized with no weakening changes.

Mr. LEGGETT. Thank you very much, Dr. Russell.  
Now, we have Mr. Cox.

#### STATEMENT OF DAVID K. COX

Mr. Cox. Thank you, Mr. Chairman.

I am the president of Trout Unlimited. We are also affiliated with the Tennessee Conservation League. We are also a member of the Tennessee Alliance.

Now, Trout Unlimited is a national organization, and has as their goal, preservation of cold water fisheries. Now, TVA would have you believe that you are merely losing 17 miles of trout water, and this is essentially the truth.

However, I do not believe that they made clear that this trout water happens to be an average of 125 yards in width. When you consider the acreage involved, when you consider the productivity that is involved, it is equivalent to about 500 miles of typical mountain stream.

Now, this is more trout water than exists in all the rest of Tennessee, and we are not talking about any ordinary trout fishery. We are talking about a trout fishery where trout in excess of 20 pounds have been caught, and 3 and 4 pound trout are not at all uncommon.

It is beyond a doubt, I do not believe, that there is anyone who will quibble over this, the best trout fishery in the Southeastern United States.

Mr. LEGGETT. Has Trout Unlimited taken a position against this project?

Mr. Cox. Yes; they have. I have fished there, oh, for many years now. I have met people from virtually every State in the Union. I have met people from Canada and Mexico, and other parts of the world. It is a well known, well recognized fishery.

Now, TVA proposes to come along and replace this with a reservoir which will have essentially no unique properties whatsoever. As a matter of fact, there are at least 22 other reservoirs within a 50 mile radius. Now, that makes no sense to me whatsoever.

From an economic point of view, from a social point of view, whatever point of view you want to take. Now, I have made numerous other points in my statement here, which I do not really think—

Mr. LEGGETT. The statements of all the witnesses will be included in the record as though they have been read.

Thank you very much.

[The following was received for the record.]

STATEMENT OF DAVID K. COX, REPRESENTING THE GREAT SMOKEY MOUNTAIN  
CHAPTER OF TROUT UNLIMITED AND THE TENNESSEE CONSERVATION LEAGUE

Trout Unlimited and The Tennessee Conservation League have actively opposed the reservoir portion of the Tellico Project for more than a decade and a half; and although I do not purport to speak for these organizations, I would also like to point out that the project has also been consistently opposed by the Tennessee Outdoor Writers Association, the Tennessee Citizens for Wilderness Planning, the Little Tennessee River Alliance, and the Tennessee Wildlife Resources Agency. Money has been raised and considerable personal time has been given in order to save the valley. The valley is, in addition to having the best cold water fishery in the southeast, a unique place of long-standing importance to mankind.

The lower Little Tennessee River Valley is a piece of land that has stirred the imagination and love of man for many centuries. Some of the oldest habitations of man on the North American Continent are found there, and the Cherokee Indians chose it as a land more sacred to them than Mecca to the Moslems. It is one of those peculiar spots of land that men come to love and cling to. So I want you to understand that we are fighting for more than tangible values that can be adequately described by specific measures of quality and uniqueness.

The Little Tennessee River provides a fishery where a man with appropriate skill and timing can catch brown trout averaging 15 inches or better until his arm gives out. Brown trout exceeding twenty pounds have been caught and 3 to 4 pound trout are not uncommon. There are a host of variables that contribute to the success of the fishery.

Before the construction of Chilhowee Dam, TVA agreed to provide a minimum flow for the needs of a now defunct ferry operation. This minimum flow capacity is designed into the dam so that today the lower Little Tennessee River is probably the only significant reach of trout water in the TVA system that has a minimum

flow. This minimum flow rate provides near optimum temperatures and dissolved oxygen (>6 ppm) for trout growth and activity and for the support of organisms that trout feed upon. There are massive mayfly and caddis fly hatches in the spring that certainly rival if not exceed some of the large western rivers. The growth rate of trout and the gross productivity of the Little Tennessee River exceeds the well-known White River in Arkansas. In terms of acreage and productivity, the Little "T" is equivalent to 500 miles of typical mountain stream. This is as much as now exists in the entire Cherokee National Forest. The minimum flow rate can be utilized by both the floating and wading fisherman, and other activities such as family float, canoe, nature, and historical trips are provided by this river environment. Except for periodic stocking by the Tennessee Wildlife Resources Agency, this fishery is essentially unmanaged. If flows were managed to make prime fishing more available and the threat of reservoir flooding removed to allow the development of appropriate supporting facilities this sports fishing industry would provide considerable economic stimulus to the area.

Certainly by now the best nationally known attribute of this large river system is that it provides the only known home for the snail darter. Now the snail darter is not just a little fish, it is an entire species of fish, and provides us with a biological indicator of the ecological uniqueness of the lower Little Tennessee River Valley.

The question is not should we stop a multi-million dollar reservoir in order to save a tiny fish, but should we destroy a productive valley and its beautiful river in order to gain a temporary economic stimulus. By closing the gates on the dam, we not only destroy the snail darter, but the unique habitat associated with it. Once they are gone, they are gone forever.

Mr. LEGGETT. Let us see, the next witness is Laural Hill King from the Eastern Band of Cherokee Indians.

Ms. King?

#### STATEMENT OF LAURA H. KING

Ms. KING. The Eastern Band of Cherokee Indians is very honored to have an opportunity to participate in this presentation. Now, our people have had such a historical and significant attachment for the Little Tennessee Valley. For several years now, we find that our people have been in the valley, at one time or another.

I would like to point out in my presentation several important factors that need to be taken into consideration.

First of all, the Little Tennessee Valley, throughout the 18th century, was the center of the political and social activity. Among the towns that were mentioned a few minutes ago are Tuskegee, which was the birthplace of Sequoyah, which was the inventor; Mialoquo, who was a famous warrior; Tanasi, the town after which the State of Tennessee derives its name; and also the other towns that are in the area to be inundated, Tomotley, Toqua, Settico, Chilhowie, and Tellassie, and Chota.

Now, as I mentioned earlier, our people have had such a great attachment for the valley. One individual, Dragging Canoe, who was a principal war chief at one time, argued that the Cherokee should abandon the Little Tennessee Valley and rebuild their towns on the Hiwassee River. The chiefs did not agree so, therefore, they continued to stay.

Another example I can give you is that of Oconstota who was a great warrior. In the fall and winter of 1782, Oconstota was forced to leave the Little Tennessee Valley. But, in the spring of 1783, he asked to return and be buried in the beloved home of Chota.

There are several other instances that can be given, showing the attachment for this area.



Now, once the removal took place in 1830, our people have still kept contact with our people who inhabited, at that time. But whenever they were forced out of the Little Tennessee Valley, I might point out that our people left it as rich and as our ancestors first found it. Simply for this reason, the Cherokee life system emphasizes the importance of balance of nature, meaning that we know that man has the power to upset this delicate balance and believe those who do so risk calamity for all mankind.

The Cherokees' ideology is based on thousands of years of experience in the south Appalachian area. At times, it becomes disturbing to us that newcomers in the area have not sought the experience.

Now, at times, it seems like we asked for political support in such issues. But then we go back into history and the Cherokees, perhaps more than any other ethnic group in the United States, realize the limitations of the Supreme Court. To give you an example of this, is that in 1831, Dr. Samuel Austin Worcester, a missionary engaged in translating the Bible to the Cherokee language, was arrested by Georgia Guard at New Echota.

After he was given a speedy trial, which was a mockery of justice, Worcester was sentenced to 4 years of hard labor as an illegal resident of the Cherokee Nation. As a result, he continued to stay in prison.

Now, we come to the question of whether we have faith in our Supreme Court or not simply because we have been hearing news reports of planned congressional legislation which would override the Supreme Court decision. Now, it should be pointed out, however, some congressional delegates in their defense, I should say that support for the Cherokee has not been political wise down the years. In 1830, the only Tennessee Congressman to vote against the Indian Removal Act was Davy Crockett, who had fought along with Cherokees at Horseshoe Bend under Andrew Jackson in 1812.

Now, although Davy Crockett respected the Cherokee rights, his constituents did not, as he was voted out of office in 1832.

Now, when the Cherokees were forced out of Tennessee in 1830, they were not citizens of the United States and had no political voice. Now, today, we take an active part in the political process. The attachment that the Cherokees have for the Little Tennessee Valley is difficult to express in terms which would be meaningful to those who have not shared our experiences.

The general attitude, however, is at least comparable to the feelings that American Jews have toward the State of Israel. Even though we feel that Cherokee sentimentality is sufficient reason to stop the dam, we do not believe that this issue by itself is sufficient to sway public opinion.

I must add that we are all aware that the primary goal of the Tellico area is economic development for a depressed area. Here I just point out that our people are very economic people. For instance, last year, our community grossed over \$18 million from our first major, which is tourism. Also, we have three other industries which have several hundred people. None of these have belching smoke stacks or waste disposal problems. Even though I can say we are economic minded people, we do not have all the answers. We realize that but, however, we can state that we can have better

alternatives for the Tellico area. Industry can be attractive without a lake. Other areas, such as agriculture, tourism, river recreation, historical learning centers, can all contribute to the economic growth.

Now, the potential of agriculture, river recreation, and historic development are going to be severely hampered if the inundation plans go through.

Now, we feel that the Tellico Dam is analogous to the last years of the Vietnam war. If you go back into history, you will find that many patriotic people supported the cause and the effort not because it was right or because it was taken in the best interest of the country, but simply because our people became involved in governmental projects, and the same is true here.

But now we have had several, not several but a couple of meetings with TVA, and it is reassuring that TVA is looking at different alternatives as to what to do with the reservoir. And without question we feel that there are better alternatives and hopefully that all of us can look at all of the fresh new insights into this project and hope that you will take our pleas and consideration into planning.

Thank you.

[The following was received for the record.]

#### STATEMENT OF LAURA H. KING, EASTERN BAND OF CHEROKEE INDIANS

By the time the flood of white settlement had reached the Blue Ridge Mountains, the only inhabitants of the present limits of Tennessee were Cherokees. In spite of the fact that the Cherokee territory included two-thirds of the State until the late 18th century, most of the Indians chose to reside in the Little Tennessee Valley. A comprehensive area map circa 1764 indicates that more than 76 percent of the State's population lived in this one river valley. The uniqueness of the environment is supported by the Snail Darter whose geographical distribution is believed to have once extended throughout East Tennessee, but for some reason has managed to survive only in the Little Tennessee River.

The Little Tennessee Valley was the center of Cherokee social and political activity throughout the period of Cherokee-white conflict during the latter part of the 18th century. In 1776, a frontier army from Virginia burned most of the towns on the Little Tennessee including Tuskegee, the birthplace of Sequoyah, Mialoquo the home of Dragging Canoe, Tanasi the town after which the State of Tennessee derives its name, as well as Tomotley, Toqua, Settico, Chilhowie and Tellassie. Only Chota, the capital, was spared.

Dragging Canoe, the principal war chief at the time, argued that the Cherokees should abandon the Little Tennessee Valley and rebuild their towns on the Hiwassee River. The majority of Cherokees, however, loved the valley too much to leave in spite of the great danger. Annually, between 1779 and 1782, makeshift armies ravaged the Cherokee country. The destruction of the Cherokee towns was so intense that the great warrior Oconstota and his family were forced to find refuge away from the valley during the fall and winter of 1782. In the Spring of 1783, the aged warrior felt that his time was near and asked to be returned to Little Tennessee Valley so that he could die and be buried at the beloved town of Chota. Continued pressure from the whites in upper east Tennessee during the 1780's caused many Cherokees to seek safer homes farther south. After Old Abram, Old Tassel, and several other peace chiefs were murdered while under a flag of truce at Chilhowie town on the Little Tennessee in 1788, the Cherokees moved their capital from Chota to Ustanali, near present day Calhoun, Georgia. In 1799, Moravian missionaries visited the Little Tennessee Valley and recorded its beauty which apparently has changed very little to this day. At Chota, they noted that the fields were overgrown and only five houses remained. They were moved by a passionate speech by Ancoo, the last beloved man of Chota, who insisted that he would never leave the Little Tennessee Valley. Despite the determination of the Cherokees to keep the remaining tribal territory, the demands for more land never ended. The Cherokees did manage, however, to retain the sites of the Little Tennessee towns

until 1819, only two decades before they were forced to cede tribal territory land east of the Mississippi.

When the Cherokees were forced out of the Little Tennessee Valley, they left the land as rich and as beautiful as it was when our common ancestors had found it. The Cherokee belief system emphasizes the importance of balance of nature. We know that man has the power to upset this delicate balance, but believe those who do so risk calamity for all mankind. The Cherokees ideology is based on thousands of years of experience in the South Appalachian area. It is disturbing to us that the newcomers have not sought the wisdom and the counsel of this experience. Fortunately, most of the members of the highest court in this land are men of insight as evidenced by the Supreme Court decision on June 15, 1978, which granted the Snail Darter and the unique environment of the Little Tennessee Valley another reprieve. Although the ruling was based solely on the Endangered Species Act, we have no doubt that the justices who ruled favorably were also cognizant of the Cherokee heritage in the valley. However, the Cherokees, perhaps more than any other ethnic group in the United States realize the limitations of the Supreme Court. In 1831, Dr. Samuel Austin Worcester, a missionary engaged in translating the Bible to the Cherokee language, was arrested by Georgia Guard at New Echota. After a speedy trial which was a mockery of justice, Worcester was sentenced to four years of hard labor as an illegal resident of the Cherokee Nation. In a classic decision, the Supreme Court ruled that the State of Georgia was in error and the missionary should be released immediately. In defiance of the Supreme Court, President Andrew Jackson said in a very famous quote, "John Marshall has made his decision, let him enforce it." Although the court ruled in his behalf, Worcester remained in prison despite the protests of the Cherokees. In teaching history to students at Cherokee High School, we maintain that such defiance of the Supreme Court could never occur in this day and age. Our faith is not strengthened, however, by news reports of planned congressional legislation which would override the Supreme Court decision. In defense of the Tennessee congressmen, it should be pointed out that in the past, support for the Cherokee has not always been politically wise. In 1830, the only Tennessee congressman to vote against the Indian Removal Act, was Davy Crockett, who had fought along with Cherokees at Horseshoe Bend under Andrew Jackson in 1812. Although Davy Crockett respected the Cherokee rights, his constituents did not, as he was voted out of office in 1832.

When the Cherokees were forced out of Tennessee in 1830, they were not citizens of the United States and had no political voice. The Cherokees and all other Native Americans have been citizens since 1924. Today, we take an active part in the political process. The attachment that the Cherokees have for the Little Tennessee Valley is difficult to express in terms which would be meaningful to those who have not shared our experience. The general attitude, however, is at least comparable to the feelings that American Jews have toward the state of Israel. Even though we feel that Cherokee sentimentality is sufficient reason to stop the dam, we do not believe that this issue by itself is sufficient to sway public opinion. The totality of the arguments against the dam have been overly sufficient to convince the people who have viewed the project objectively that the dam is ill advised. Almost all of the goals of the Tellico Project can be accomplished without impoundment. The primary goal is economic development for a depressed area.

The Little Tennessee Valley and the present Cherokee Reservation have much in common. The Cherokee Reservation is on the eastern border of the Great Smoky Mountains National Park. The Little Tennessee Valley is on the southern border of the park. Last year, our community grossed over \$18 million from our number one industry, tourism. Cherokee has three other industries which employ several hundred people. None of these have belching smoke stacks or waste disposal problems. The Cherokees are economic minded people and although we don't have all the answers, we have faced many of the problems of changing economics. It is apparent from the GAO report and those by independent economists that while the dam would certainly bring economic benefits to the area, much greater benefits can be attained without the dam. Industry can be attracted without a lake, other areas of development such as agriculture, tourism, river recreation, historic learning centers, can all contribute to the economic growth. The potential of agriculture, river recreation, and historical developments in the valley would be severely hampered by inundation.

Most of the people who have studied the Tellico project in detail know that greater economic benefits can be derived without the dam. Convincing some of the politicians in Tennessee that there are better alternatives, still seems to be an uphill battle. The mentality of this group seems to be typified by the local Mayor of Tellico Plains, Tennessee, which is located on the former Cherokee site of Great

Tellico. The Mayor was quoted in the June 16th issue of the Knoxville Journal as stating the land "isn't suitable for anything but a lake. Right now it's a mud flat, and unless TVA finishes what they started out to do, it's \$107 million down the drain." The land is not a mud flat. Lush vegetation has returned to the valley and the fertile fields which are rated as being among the best farmland in the world can still be cultivated. Most of the money spent on the Tellico Project was for land acquisition. More than 38,000 acres were purchased by TVA in spite of the fact only 16,500 acres would be inundated. Given the inflation rate in real estate prices since TVA started purchasing farms more than a decade ago, a healthy profit could be made by reselling only a part of the land.

The Tellico Dam is somewhat analogous to the last years of the Vietnam War. Many patriotic people support the effort, not because it is right or because it is in the best interest of the country, but simply because the project is undertaken by a governmental agency. It is reassuring that much of the study of the alternative proposals is coming from within the Tennessee Valley Authority. The new director is studying the project with an open mind and feels that alternatives to impoundment should be carefully evaluated.

Without a question, there are better alternatives for the Little Tennessee Valley than inundation. Daily, more and more people are becoming aware of this. Hopefully, the congressional delegates from Tennessee will not be among the last to gain fresh insights into the project.

Mr. LEGGETT. Thank you very much.

Mr. Forsythe?

Mr. FORSYTHE. I want to express to you the same sentiment that my colleague from Michigan expressed to the previous panel. I appreciate the statements of all these witnesses and the effort they made to come before us here today. If we only had other members hearing this, it might be easier for us in this room here today. We hope that we can find a satisfactory resolution to this whole matter.

Mr. LEGGETT. Thank you.

The meeting will now stand in recess until 2 o'clock this afternoon, at which time we will begin with the last panel.

[Whereupon, at 12:08 p.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.]

#### AFTERNOON SESSION

Mr. LEGGETT. The meeting of the subcommittee will please come back to order.

Professor Plater, you can call the remainder of your panel, if you would.

Mr. PLATER. Mr. Chairman, we have with us Dr. Jefferson Chapman of the University of Tennessee, Department of Anthropology. Also Ms. Julie Hardin of Knoxville, Tenn. Ms. Sarah Cook of the Tennessee Endangered Species Committee, and Mr. Will Skelton, who is the head of the Tennessee Sierra Club.

Mr. LEGGETT. Very nice to have all of you folks with us.

Mr. PLATER. If you have questions for any other prior witnesses from this morning, we would also be pleased to respond to any other questions you have.

Mr. LEGGETT. Certainly.

If you could figure out the value quotients, that is part of our mission. We are only interested in dollars and cents from electricity and water. We are interested in reasonable evaluations for recreation days and historical site enjoyment days. I do not know if they can figure out a way to evaluate Indian lore appreciation or not.

I suspect that at some point we will have to look at that. The fact that I have not asked a lot of questions is merely reflective of the position that when we get involved in things beyond the precise endangered species area, we are somewhat afield. But that is all important.

Dr. Chapman?

#### STATEMENT OF JEFFERSON CHAPMAN

Dr. CHAPMAN. Thank you. I would like to make reference, if I could, to the maps that were distributed to you this morning. I have brought a larger map which has some colored dots placed on it.

You were promised that I would put in perspective for the committee where these archeological sites are, and there is a larger map that came up there, too, with red and green dots on it.

If I could come up and point out a couple of things on it.

Mr. LEGGETT. Let the record show that the map contains the flooded out area of the Tellico Dam and contains some 20 or 30 red and green dots.

Dr. CHAPMAN. OK.

Within this area, the shaded area, is the proposed pool of the Tellico Reservoir. There are within the reservoir area 280 archeological sites.

Now, as early as 1894, Cyrus Thomas of the Bureau of Ethnology, a branch of the Smithsonian Institution, surveyed the States—and it is quoted in my testimony there—that this was the most significant valley in the Appalachian district.

And research since that time, continuing up until the present, has confirmed Thomas' observation, and has recorded as I say, 280 archeological sites that span 10,000 years of Indian occupation in the valley.

Now, on this map are only the major sites. Obviously, if we put 280 dots on there, it would be a solid series of dots. The red ones are the towns, the Overhill Cherokee towns that are illustrated on the Timberlake map of 1762, starting up here with Halfway town, moving to Settacoo, to Chote, to Tanassee, to Toqua, to Tommotley, to Tuskegee, and down here to Mialaquo. These are all within the floodpool area and will be inundated.

Above that, already inundated are the towns of Tallassee and Chilhowee. There will be no Overhill Cherokee sites except for Great Tellico which is up the Tellico River, if the reservoir is filled.

So the first point I wish to make to the committee is that the resources in the valley are of extreme significance, and the valley itself, with these 280 sites, is the most significant valley remaining in the Southeastern United States, archeologically.

Mr. LEGGETT. How about the green dots?

Dr. CHAPMAN. Green dots are prehistoric sites, dating from 1550 on back to around 7500 B.C., and as I say, we do have continuous occupation in that valley of that time period.

Now, of these sites, there are a number of significant ones. The Overhill Cherokee towns are the most important. They are unique. Once they are gone, they will be no more. They are the homeland of living people.

Mr. LEGGETT. How many people are occupying that area that is to be flooded out?

Dr. CHAPMAN. How many people occupied that area as Indians?

Mr. LEGGETT. How many people occupy it at the present time?

Dr. CHAPMAN. There is no one there. The valley has been clear cut. All homes and everything have been moved out.

Mr. LEGGETT. How many people occupied it before the TVA takeover?

Dr. CHAPMAN. There was 300 and some families.

Mr. LEGGETT. Were those Indian families in there?

Mr. PLATER. The Indians had been cleared out by General Jackson.

Dr. CHAPMAN. The Overhill Cherokees were removed from the area.

Mr. LEGGETT. Are those nine red dots the town sites?

Dr. CHAPMAN. The remains are situated below the plow zone, the areas disturbed by the plow. There are impressions of the posts of houses, of the council buildings. There are the pits that were used for refuse. There are also the burials of the Cherokee themselves.

Mr. LEGGETT. Are those areas designated as State or National historical markers?

Dr. CHAPMAN. One thing that was mandated, of course, in the Historic Preservation Act of 1966, and again in Executive Order 11593, is that a determination of eligibility of sites needed to be done. This was not done initially.

In 1973, the State historical preservation officer notified TVA that they felt that all the Overhill Cherokee sites were eligible for the Register; Chote and Tanassee later that year were placed on the Register.

Fort Loudoun, the first British Colonial fort, west of the Appalachians was also placed on the National Register, as was the Federalist period Tellico blockhouse.

TVA did not place the other Overhill Cherokee sites on the Register, though this was requested by the State, until last year, late 1977.

Now, yes, to my knowledge, all the Overhill Cherokee sites have been nominated to the National Register, along with one or two of the prehistoric sites in the valley. That is not to say that these are all of the sites that are eligible.

We have recently nominated all 38,000 acres in the Tellico project to the National Register as an archeological district since the valley is a cohesive cultural unit; the Indian cultures were adapted to the valley, they lived in the whole thing. The little tiny sites were as important as the big sites. And to pinpoint one as being eligible for the National Register is really absurd when you are dealing with a culture area such as this.

I have given you as exhibit A of my testimony the significant portion of that nomination. This is now being considered by TVA as to whether they will nominate the district themselves, or whether it will be submitted as an individual nomination.

[The following was submitted:]

## EXHIBIT A—NATIONAL REGISTER OF HISTORIC PLACES

## NOMINATION FORM, TELlico ARCHEOLOGICAL DISTRICT SECTION 8—SIGNIFICANCE

In 1894, Cyrus Thomas observed: "The valley of the Little Tennessee River from where it leaves the Smoky mountains which form the boundary between North Carolina and Tennessee, to where it joins the Tennessee River in Loudon County, is undoubtedly the most interesting archeological section in the entire Appalachian district." Investigations by the Bureau of Ethnology in the late 19th century, by the Museum of the American Indian in 1919, by the Works Project Administration in 1939, and by the University of Tennessee, Department of Anthropology from 1967 to the present, have more than confirmed Thomas' observation. Identified prehistoric and historic cultural resources now number over 280 and represent a continuum of Indian and Anglo-American occupation that span the last 10,000 years. The significance of these resources within the proposed Tellico Archeological District include:

1. The presence of both major and minor sites of the Archaic, Woodland, Mississippian, Cherokee, and early Anglo-American culture periods.
2. Multicomponent sites distinguished by extensive duration of occupation providing stratified archeological data relating to the cultural sequence in the area. These include the earliest well dated, open stratified sites in the Southeastern United States.
3. The presence of isolated single component sites which provide cultural data from a particular period of occupation.
4. A geographically distinct area in which the Indian cultures articulated and interacted during each culture period, leaving a laboratory for the study of 10,000 years of cultural adaptation to a valley.

Most of the more than 280 archeological sites recorded in the district are located within the proposed Tellico Reservoir pool area. Although excavations have been conducted at 21 sites, no more than about 5 percent of any one site has been investigated. Investigated sites range from permanent villages covering 30 to 100 acres, to small transient camps identified from a few artifact fragments. Most sites occur in the top three feet of soil on the first and second river terraces. Plowing has exposed lithic and ceramic cultural material in these locations. Below plow disturbed deposits, there are frequently found undisturbed remains of several millennia of Indian occupation. Recent excavations demonstrate that the earliest occupations at some sites are buried as much as fifteen feet below ground surface and are as much as 9500 years old. Survey and excavations demonstrate that the proposed Tellico Archeological District is composed of a unique aggregate of culturally significant properties.

Over 60 deeply buried Archaic period sites (7500 B.C. to 1000 B.C.) have been discovered in the District. Nine of these sites have been partially excavated. The Icehouse Bottom site (40MR23), for example, contains stratified sediments representing Early through Middle Archaic period occupations. Date from this site and other sites of comparable age indicate extensive exploitation of the alluvial bottoms and first terraces of the Little Tennessee and Tellico Rivers during the Archaic period. Studies of settlement, subsistence, and lithic technology provide one of the most thoroughly documented and integrated sequences of cultural adaptation and change known for the Archaic period in Eastern North America. Besides Icehouse Bottom, significant Middle Archaic and Early Archaic period occupations occur at the Bacon Farm (40LD35), Bussell Island (40LD17), Rose Island (40MR44), Calloway Island (40MR41), Harrison Branch (40MR21), Patrick (40MR40), and Howard (40MR66) sites.

The Late Archaic period Iddins (40LD38) and Bacon Bend (40MR25) sites are especially significant regarding development and change in settlement and subsistence patterns. In addition to the exploitation of local plant foods such as hickory nut, acorn, and walnut, these sites contain evidence for the early use of plant cultigens. Domesticated squash, gourd, and sunflower have been identified and dated to the second and third millennia at these sites. Together with remains from the Green River, Kentucky area and Phillips Spring, Missouri, the Tellico squash and gourd remains are among the earliest documented tropical cultigens in Eastern North America.

At least 80 Woodland period (500 B.C. to A.D. 900) sites are known in the Tellico Archeological District, but only five have been sampled through excavations. The Early Woodland period occupation at Calloway Island contains ceramics, lithic artifacts, and burials which suggest important regional interrelationships with Adena manifestations in Kentucky, West Virginia, and Ohio. In addition, the Pat-

rick (40MR40), Bacon Bend (40MR25), and Rose Island (40MR44) sites provide significant data for documenting changes in lithic technology, ceramics, settlement, and subsistence during the Early Woodland period. The pattern of local development and external relationships is further reflected by the Middle Woodland period (A.D. 300 to A.D. 700) component at Icehouse Bottom where numerous artifacts demonstrate participation in the Hopewell Interaction Sphere. Thus the site, and by implication the Tellico District, is clearly linked with cultural development elsewhere in Eastern North America particularly in North Carolina and Ohio.

Late Woodland period (A.D. 700 to A.D. 900) occupation in the Tellico Archeological District is poorly understood since few sites of this age have been identified from survey and test pit data. Most of the 76 mounds reported by Cyrus Thomas are undoubtedly Late Woodland period earthworks. Although Thomas investigated some of these mounds, none of the small number of extant mounds have been investigated by the Tellico Archeological Project since they occur outside the Tellico Reservoir inclusion area. All such mounds, however, are included in the Tellico Archeological District. Despite the paucity of mound excavations, the Martin Farm site (40MR20) has produced significant data regarding changes from Late Woodland period to Mississippian period cultural adaptations in the Lower Little Tennessee River Valley. Few comparable sites are known elsewhere and none contain the wealth of artifact, subsistence and contextual information found at Martin Farm. Consequently, the Martin Farm site is a key element in developing models of Late Woodland/Early Mississippian cultural change in the southeastern United States.

Documented Mississippian period sites in the Tellico Archeological District include Early Mississippian Hiwassee Island Phase and Late Mississippian Dallas Phase manifestations. The Bat Creek site (40LD24), the Martin Farm site (40MR20), and the Mayfield II site (40MR22) represent Early Mississippian villages. Citico (40MR7) and Toqua (40MR6) are Dallas Phase occupations consisting of large palisaded villages and associated mounds. These sites contain abundant and significant information regarding mound construction sequences, house patterns, village plans, and burial patterning. These data and the associated artifact, faunal, and botanical remains reflect pan regional interaction with sites throughout the Southeastern United States.

Covering over 20 acres, Toqua is the last remaining Mississippian site of this size in East Tennessee. Although considerable effort was devoted to excavating the site, there is no question that more than 90 percent of the site is uninvestigated. Considering the amount of data already recovered, Toqua contains an astronomical amount of information available at no other site in East Tennessee and few other sites in the Southeastern United States.

Unique among the archeological resources in the Tellico Archeological District are the towns of the Overhill Cherokee (A.D. 1700 to A.D. 1805). The role of these towns in the settlement, exploration, and history of the southern colonial frontier and their participation in political, military, missionary, and commercial activities during the 18th and 19th centuries is unparalleled in the Southeastern United States. There is abundant documentation that the Overhill Cherokee in the Little Tennessee River Valley significantly affected the history and development of the United States. Overhill Cherokee villages with this distinction are found only in the Lower Little Tennessee River Valley within the Tellico Archeological District.

Archeological investigations at such sites as Chota (40MR2) and Tomotley (40MR5) have greatly expanded historical accounts of Overhill Cherokee culture. Besides abundant cultural remains, including ceramic, lithic, and Euro-American manufactured artifacts, recovered information includes architectural data pertaining to Cherokee townhouses, domestic structures, and village patterns. The sites are their articulation with contemporary Euro-American settlements provide a rare opportunity to study Cherokee acculturation from initial Euro-American contact, through frontier expansion, to Indian removal. Such studies would be impossible to accomplish with historic and ethnographic information alone. Furthermore, the study of Euro-American/Cherokee interaction in the Tellico Archeological District has important implications for discovering patterns of American Indian acculturation throughout the United States. Besides Chota and Tomotley, important Overhill Cherokee towns in the Tellico Archaeological District are: Toqua (40MR6), Mialoquo (40MR3), Tuskegee (40MR24), Tanasee (40MR62), Citico (40MR7), Halfway Town (40MR8), and Starnes (40MR32). These towns represent a cohesive group of interrelated settlements. No single town contains all the elements of development and change which characterizes Overhill Cherokee culture.

Associated with the Cherokee towns in the Tellico Archeological District are the British Fort Loudoun (40MR1) (1756-1760) and the American Tellico Blockhouse (40MR50) (1794-1807) and Virginia Fort (40MR77) (1756). Like the Cherokee towns,



these sites played an important role in the political, military, and commercial history of the United States. Fort Loudoun and Virginia Fort were particularly important in the history of colonial frontier expansion and in securing an alliance between the British and Cherokee during the French and Indian War. The Tellico Blockhouse furthered American settlement after the Revolutionary War and directly influenced Cherokee acculturation.

Historically important persons who visited or resided in the Tellico Archeological District are numerous. Although by no means a complete list, Europeans and Americans include: Hernado DeSoto (may have visited the area in the 16th century), John W. G. DeBrahm, Lt. Henry Timberlake, Lousi Philippe (Duke of Orleans), John Stuart, John Kirk, John Sevier, William Christian, William Blount, John McGhee, James Adair, Samuel Henry and Nancy Ward. Notable American Indians include: Old Hop, Ocongstota, Ostenaco, Dragging Canoe, Attakullakulla (Little Carpenter), Chuwalooka, Old Tassel, and Sequoyah.

#### PREVIOUS ALTERATIONS AND ADVERSE IMPACTS

In the fall of 1976, all vegetation below 820 ft AMSL was cut in preparation for the inundation of the Tellico Reservoir. That which was not burned was buried in bulldozer trenches six to eight feet deep, situated principally along the river margins and terrace edges. Care was taken so that most major site areas were protected from burial and damage during clear cutting. Minor sites received some adverse impact but in most cases the majority of the site areas remain intact.

Excavations in mitigation of the adverse impact of the Tellico Reservoir were conducted at the major sites (See site inventory) with funding from the TVA and the NPS. From each of the excavations conducted between 1967 and the present considerable archeological data were recovered. It must be emphasized, and it is the point of this nomination, that although mitigation took place, the majority of each of the sites remain intact. At the Chota/Tanasee area, for example, approximately 10 percent of the site was investigated; at all other sites the excavations comprise less than 5 percent of the site area.

Under the fiscal guidelines of Public Law 93-291, mitigation of the resources by TVA has been sufficient as over one per centum of the project cost has been spent on archeological investigation. Recognizing that the resources warranted further investigations the NPS has funded additional excavations since the fall of 1976. However, the cultural resources in the proposed Tellico Archeological District are of such frequency and significance that these mitigation efforts are deemed inadequate to permit their destruction. All of the resources in the proposed Tellico Archeological District have not been identified, only a small percent have been tested and even a lesser percent have been sampled. No reconnaissance of the above pool resources has been conducted; limited data and numerous precedents from other river valleys suggest that smaller sites functioned within the settlement systems of the various cultural periods.

Large amounts of data, therefore, remain to be extracted from the archeological sites in the proposed Tellico Archeological District. Analysis of the data recovered to date, under mitigation of varying quality, has generated many new questions that need additional work on sites already tested, as well as on those not yet investigated. Data recovered during the early stages of mitigation are not comparable to those recovered during the later stages; archeological techniques and the questions asked of the data change. The Tellico Archeological District is unparalleled in the Southeast for the data recovered and the data yet remaining *in situ*.

The abundant and significant cultural resources remaining in the Tellico Archeological District warrant protection and preservation for at least the following reasons:

1. The resources that remain in the valley are numerous and have only been partially and unsystematically sampled.
2. Certain sites or groups of sites are unique in the Southeastern United States and are resources that cannot be duplicated. These include the deeply stratified Early and Middle Archaic sites, the Dallas phase Toqua site, and the Overhill Cherokee towns. Over 90 percent of each of these sites remain unexcavated.
3. Specific information from any one site can be fully understood and appreciated only in terms of an array of functionally related occupations within the district.
4. Previous excavation and research conducted in the valley now permit the generation of specific research designs to be tested under non-salvage situations.
5. District nomination will encourage the preservation of these remaining unique resources for future generations and will afford an opportunity to develop particular sites for public education and enrichment.

Mr. FORSYTHE. TVA has nominated some sites within the area to be flooded?

Dr. CHAPMAN. TVA has nominated, with information given to them by the University of Tennessee archeologists and their own staff, the Cherokee sites to the National Register.

This is about 3 years after they were requested to do so.

Mr. FORSYTHE. But having done that, they could still flood the area?

Dr. CHAPMAN. Oh, yes. Being on the National Register does not prevent a site's destruction. It merely means that they must, with advice from the advisory council, mitigate the adverse impact.

Now, this is the other point I wish to make. TVA and the National Park Service have spent enormous sums of money in mitigation of adverse impact. This money is in excess of the 1 percent required by Moss-Bennett.

But, at the same time, we are dealing only with the excavation of 5 to 10 percent, and in most cases less than 5 percent at any one of those sites.

The resources in the valley, as I said earlier, make that valley the most significant one remaining in the Southeastern United States, and we question whether sufficient mitigation has been done to permit the destruction of the valley.

There are over 200 sites that excavation has not been done on at all. By the letter of the law, except for the fact that TVA still does not have a memorandum of agreement to have done this research, they have mitigated the impact. But it is my feeling—as a professional archeologist—that the sites are so significant and so valuable, for the reasons that Mr. King and Mr. Durham stated, for living Indian groups as well as for the education and the research potential, they will meet all these Federal guidelines that are stating that these things should be preserved for future generations.

If we are going to consider alternatives, we have another endangered species sitting right here. And this is one we can't pick up and transplant. So when it is destroyed it is destroyed forever. TVA, however, has stated that they feel that inundation is the best way to protect and preserve these sites.

I will give to you a letter—that I mentioned as part of my testimony—in which I take issue with this position. Inundation is a destructive process. And in fact, the case of Tellico, it will destroy a number of these resources.

That is not the solution to the preservation and protection of these resources. And I can expand on reasons why. I think the letter will mention some of those.

Mr. LEGGETT. All right. The letter dated May 29 will be put in the record at this point.

This committee really does not have jurisdiction over designation of archeological sites.

Dr. CHAPMAN. No. I am aware of this. If we are looking at the total overview of what is significant about that valley, that is, valuable farmland in other ways, perhaps less tangible ways—

Mr. LEGGETT. Is there anything to see, as far as archeological sites go, if the subcommittee were to go down there?

Dr. CHAPMAN. If you were to go today, no. All the sites have been backfilled simply to protect them. Now, one of the plans——

Mr. LEGGETT. Who backfilled them?

Dr. CHAPMAN. Backfilled by the University of Tennessee archeological crews that did the salvage archeology in the area.

What would be proposed, in various alternative use plans, would be the restoration of certain of the key sites as cultural centers, as exhibits, as living examples of what the prehistory of the valley is. Not just overhill Cherokee occupations, but to go into one of these sites that represent 15 to 17 feet of just layer upon layer upon layer of Indian occupation, going back close to 10,000 years. Let the people see this. Set up educational exhibits. This is something that people could see that would be part of the whole general use plan of that valley.

Mr. LEGGETT. What does backfilling do?

Dr. CHAPMAN. Well, if you have dug a hole here and removed all of the soil and extracted all of the data, all of the artifacts, there would be a gaping hole. You then take the dirt and place it back in the hole.

Mr. LEGGETT. Now, in your exhibit A, you described what you found in the holes.

Dr. CHAPMAN. Exhibit A is a statement of significance, which is part of the National Register nomination form—and it will summarize in more detail for you the prehistoric as well as the historic sites and culture in the valley, and the reason that they are significant and outstanding, making it eligible, in our estimation, for placement in the National Register as a district.

Mr. LEGGETT. What have you found in your excavations?

Dr. CHAPMAN. That would depend on the cultural period that you are speaking of. If you go back to the sites, 10,000 years old, all that is preserved are the stone implements which probably represent a small percentage of the material culture of the people.

We get carbonized plants, remains which can tell us something about the vegetation and the subsistence patterns.

If we move way up in time to late prehistoric sites, there are large sites that represent permanent villages with numerous houses, a plaza, one or two earthen mounds capped by religious or civic structures and a wooden palisade surrounding the village. Corn, beans, and squash were the staple food.

And then of course the Overhill Cherokee sites themselves. We have defined their structures and have found the great council house at Chota, which was the principal focus of the metropolis there. And we are getting a great deal of information about the material culture, the people and the impact on the Cherokee of the Anglo-American intrusion into that area—trade.

Mr. LEGGETT. Did the Indians there live in wigwams?

Dr. CHAPMAN. This is not a wigwam society. The structures the Cherokees lived in were not wigwams. They are fairly substantial structures with large saplings, frequently clay walls, and later log cabins were used by the Cherokee.

We don't have a bunch of tepees, or things like this, scattered down the valley.

Mr. LEGGETT. On your map you show little triangles where the villages were.

Dr. CHAPMAN. Perhaps a poor choice of symbol. We have very little understanding, once we get back a couple of thousand years, exactly what the structures were of the people. I think we have learned a tremendous amount in this valley, and the TVA contends—and rightly so—that more money has been spent for archeology in this valley than any other reservoir project to date.

As a result we have a whole lot more information. We weep over what we have lost in other reservoirs where similar archeology was not done.

Mr. LEGGETT. Who paid for the archeological research?

Dr. CHAPMAN. The Tennessee Valley Authority paid for it, as is mandated under the Moss Bennett Act. The National Park Service has also paid for a large portion of it.

Mr. LEGGETT. How much have they spent?

Dr. CHAPMAN. I would say—I cannot give you an exact figure, but it is well over \$400,000 for the Park Service. And if you take into account the restoration of Fort Loudoun and the stabilization of the Tellico blockhouse and the Chota Council House area, TVA has spent probably over \$1 million in archeological work.

Dr. CHAPMAN. Thank you very much. I appreciate it. If you have any questions.

[The following was submitted:]

#### STATEMENT OF JEFFERSON CHAPMAN

I am Dr. Jefferson Chapman, a professional archeologist in the Department of Anthropology at the University of Tennessee and the Principal Investigator of the Tellico Archeological Project. I have been asked to comment on the archeological resources in the Tellico Project area. These comments will focus on the sites and their significance, the investigations that have been conducted at these sites, and the merits of preserving the sites.

The archeological resources within the proposed Tellico Reservoir have long been recognized as being among the most significant in the Southeastern United States. As early as 1894, Cyrus Thomas of the Bureau of Ethnology (a branch of the Smithsonian Institute) observed: "The valley of the Little Tennessee River from where it leaves the Smoky mountains which form the boundary between North Carolina and Tennessee, to where it joins the Tennessee River in Loudon County, is undoubtedly the most interesting archeological section in the entire Appalachian district." Subsequent investigations have both confirmed Thomas' observations and identified over 280 archeological sites in the reservoir area that document the continuous occupation of the valley by the American Indian for over 10,000 years. Reflecting the prehistoric and historic importance of the lower Little Tennessee River valley, the Tellico Project area has recently been nominated to the National Register of Historic Places as an archeological district. Exhibit A is a copy of a portion of this nomination that will provide the Committee a detailed statement of the valley's cultural significance.

All 280 sites are important because they preserve the record of changing lifeways in the lower Little Tennessee River valley. Of special and unique importance are three groups of sites. Foremost are the 18th century Overhill Cherokee towns. The role of these towns in the history of the southern colonial frontier and as former homes of living Indian groups is of great historical importance. With the exception of Great Tellico, all of these towns are situated in the lower Little Tennessee River valley. Also unique are the late prehistoric Dallas phase sites of Citico and Toqua which are the last large sites of this phase extant in the southeast. Similarly unique are the number of deeply buried Indian sites dating between 7000-9500 years ago that have been identified within the proposed reservoir. Although a few sites of this type exist elsewhere in the eastern U.S., nowhere have so many been identified in a single valley.

Over the last ten years, TVA and the National Park Service have contributed considerable monies to fund archeological investigations on sites within the proposed reservoir. Excavations, of varying quality, have been conducted at most of the major sites and enormous amounts of data have been recovered. These excavations

have, by no means, recovered all of the information; in fact, excavations have exposed no more than 10 percent of any site and on most of them, less than 5 percent. Smaller sites, over 200 in number, have had no excavations at all. It is important for the Committee to realize that there are still enormous amounts of data remaining in the reservoir area and that the salvage efforts to date have served greatly to place in perspective how significant and unique the valley is archeologically.

Concerning the future of the archeological sites, it is my opinion that the sites are of such significance and frequency to warrant preservation. Inundation is not the best way to preserve and protect the archeological resources in spite of TVA's contention that it is; I have conveyed a refutation of this stance to TVA in recent correspondence. Preservation of the archeological sites would be in the spirit of Executive Order 11593 and the National Historic Preservation Act through maintaining them " \* \* \* for the inspiration and benefit of the people \* \* \*." If preserved, the sites could become an integral part of any alternative use plan for the valley by providing opportunities for cultural resource management and preservation.

Remains of our cultural heritage are endangered species also; when they are of such significance and number as those in the lower Little Tennessee River valley, we must consider very carefully if we can justify their destruction. Our research suggests that we can't.

Mr. LEGGETT. Mr. Forsythe, any questions?

Mr. FORSYTHE. No.

Mr. LEGGETT. Mr. Bonior?

Mr. BONIOR. No.

Mr. LEGGETT. Next, we will have Julie Hardin.

#### STATEMENT OF JULIE HARDIN

Ms. HARDIN. I want to say first of all, when I first got involved in this struggle, 3 years ago, my husband told me: "You know, Julie, the snail darter is actually a red herring."

I think today proves him absolutely correct.

I want to make three points with you gentlemen, as quickly as I can. The No. 1 point in that this has become in terms of international coverage an issue much greater than only east Tennessee. Part of my testimony is the original London Times Sunday article, on the "Snail Darter Defying The U.S. Government," May 1978.

Another part of my testimony is in the Atlanta Journal and Constitution Magazine, the Sunday lead article, March 27, 1977.

The eyes of the world and Nation are upon us and upon you gentlemen, and on the rest of your colleagues.

Mr. LEGGETT. What do you want us to do? Do you want us to put those in the record?

Ms. HARDIN. Yes, I would like that. I will make sure that you get them.

Why are more people concerned with this issue than just east Tennesseans? I think one reason is because we know now that we have come through the complete American judicial system. We started off at the district court, local court. We lost that, and we next went to the court in Cincinnati, the Federal court of appeals. I hope you gentlemen have had a chance to read Judge Celebreze's opinion—in which we did win. It is a very eloquent opinion.

TVA then appealed. We came to the national court, the highest court in the land, the Supreme Court.

Last Thursday we won there. I think that the world is looking at us thinking what is going to happen to these folks who have come the entire route of the U.S. judiciary system and who have won.

Now, we have been the whole route of the American judicial system. What next? And I am also asking that same question. I think that it is important to answer that quickly.

I also want to talk about the Smoky Mountains. One of the great motivations for moving to Knoxville was to be in close proximity to that elegant area. And if I may, as an advocate of the Smoky Mountains, I would like to read a statement of the Superintendent, Mr. Boyd Evison, of the Smoky Mountains National Park—two paragraphs of this statement. This is regarding the relationship between the Great Smoky Mountains National Park and the 33-mile stretch of the Little Tennessee River Valley affected by the Tellico Dam, snail darter issue.

The relationship of physical proximity between the two areas in obvious, as you look at the map. The upstream and the affected area is a couple of minutes drive away from the park, which is the most heavily visited of all the national parks in the United States, and from the terminus of the Foothills parkway administered by the National Park Service.

I do not know how to measure the great good done to the human psyche in the smell of clean air, flowers and falling leaves, by the sight of uninterrupted wildland vistas and untamed wildlife, by the sound of wind in trees, the rainfall, the streams, rapids, and the birdsongs. These things are obviously very difficult to measure, but they matter nevertheless. These options for special human experience are in fact now threatened.

It seems to me that the Tellico and the Little Tennessee area, preserved as it is, could significantly reduce that threat.

Last, I would like to quote Felix Frankfurter—Justice Frankfurter—in relationship to our long struggle and to our hearing here today: “Wisdom too often never comes at all and should never be rejected merely because it comes late.”

I am naive enough to believe that the Supreme Court ruling handed down is just a little bit of wisdom.

Thank you.

[Ms. Hardin submitted the following statement:]

STATEMENT OF BOYD EVISON, SUPERINTENDENT, GREAT SMOKY MOUNTAINS  
NATIONAL PARK

Mr. EVISON. Mr. Chairman, I appreciate being given this opportunity to share with you my views regarding the relationship between Great Smoky Mountains National Park and that 33-mile stretch of the Little Tennessee River valley affected by the Tellico dam snail darter issue.

The relationship of physical proximity between the two areas is obvious if you look at the map. The upstream end of the affected area is a couple of minutes' drive away from the park, which is the most heavily visited of all the national parks in the United States, and from the terminus of our Foothills Parkway, administered by the National Park Service.

Some aspects of the relationship between the two areas probably lend themselves handily to quantification; some do not. The latter have to do with values that are highly subjective, but no less real, values that probably come closer to the heart of what national parks are all about than do those handily measured things that generally are reflected in cost-benefit ratios.

The values that I refer to tend to be neglected, and I guess we tend to be a little reluctant to refer to them because they have more to do with human emotions, with concern for generations not yet born, and with matters relating to the heart and soul of human beings rather than with the accumulation of more “things.” “Things” are easier to measure and more comfortable to discuss, it seems.

But those values—emotional, intangible—relate clearly to the quality of human life. They relate to diversity in the human environment, to unduplicated and irreplaceable options for human experiences and increased knowledge. Thus, they may deserve a place, as fundamental givens, in the computation of costs and benefits of projects affecting them. They are values no more easily measured than

are your and my love for our children, our hopes for our grandchildren, or our dedication to freedom and justice.

In the case of the Smokies, those values have to do with sanctuary. The Great Smoky Mountains National Park is a half-million acre area embracing one of the world's most remarkably diverse arrays of plant and animal life, giving refuge for those living things and the systems and processes to which they are integral.

And the great chunks of unspoiled mountain terrain provide sanctuary for the human animal as well, a place in which to find—even if only from afar, by knowing it's there—respite from the sights, sounds, smells, and pressures commonly associated with the everyday life of most Americans.

I don't know how to assess in understandable units the value of a day on trails free of the presence of internal combustion engines; free of the smell of the neighbor's kitchen exhaust of barbecue rack; free of police whistles, traffic lights, and clocks.

I don't know how to measure the good done to the human psyche by immersion in an environment dominated, instead, by the smell of clean air, flowers, and fallen leaves; by the sight of uninterrupted wild land vistas and untamed wildlife; and by the sounds of wind in trees, rainfall, stream rapids, birdsong—and of silence, punctuated by the snap of a twig or the rustle of an unknown creature's passing in the night—which can still be found in the Great Smoky Mountains National Park.

These things are obviously very difficult to measure; but they matter, nevertheless. These options for special human experience are, in fact, threatened. It seems to me that the Tellico or Little Tennessee recreational and cultural complex could significantly reduce the threat.

Most of the park's use is concentrated along and near its 200-plus miles of public roads. Those roads can handle considerably more traffic on most days, and certainly over a year's time than they do now. But the quality of each sightseer's experience is surely impaired, to some extent, by each increment in the density of such use.

The chance to "have the place to yourself" by coming early or late in the day, or in the off-season, is steadily diminishing. And so we may in the future need to limit the amount of automobile use more directly than by letting congestion-avoidance do it for us.

The park beyond the roads seems much nearer saturation than are the roadways. Recent studies indicate that campsites and trails have suffered cumulative degradation through long-term overuse and misuse. I think we can relieve this to some extent by a variety of measures. But the extent to which we can do this is limited by considerations of topography, resource integrity, and the preservation of options for those human experiences whose availability cannot be assured elsewhere, options often having to do with freedom and solitude. For example, uniform distribution of use at some "optimal" capacity level is not necessarily the ideal—it should always be possible in the Smokies, to find places where one may hike for days at a time and see few, if any, other people. If not there, where else in the East?

So, the Great Smoky Mountains National Park is a mixture of periodically dense roadway use—capable of some increase—and sanctuary from the effects of a modern society whose very real benefits are sometimes simply too much with us.

That 33-mile stretch of the Little Tennessee affects, and is affected by, those values, experiences and resources of the Smokies in several ways:

First, a Little Tennessee recreational-cultural complex could offer an attractive alternative to the Smokies for many of our visitors, particularly for those who come from within 55 miles or so of the park. Visitors from nearby averaged 11.3 days per year in the park in a recent computation, and 20 percent of them were in the park 38.4 times in the year.

Second, the presence of such a major attraction, offering experiences fully comparable to many of those most sought after in the Smokies, would help encourage the flow of traffic around the park. Such a flow would provide for excellent views of the park, would give access to short spurs reaching existing developed areas on the park's edges, and would give private enterprise much increased opportunity to profit by providing needed services and facilities associated with distinctive areas outside of the park.

As an alternative attraction, a Little Tennessee complex based on the free-flowing river and unflooded archeological and historical sites could supplement the Smokies, to a considerable extent, as a place for sightseeing, picnicking, camping, history-absorbing, stream fishing, horseback riding, and boating. These are among the foremost reasons for most visits to the park.

Among area residents, more than two-thirds come to picnic, nearly two-thirds to hike or walk, 28 percent to fish, and 25 percent to camp, and 16 percent to ride horseback.

Stream fishing, in fact, is the activity for which the demand is expected to increase most dramatically by 1990 in the Smoky Mountain Region. A 33-fold increase in demand is forecast by State and Federal planners. I have some misgivings about the projections, but I think at least that is a fair index to the kind of increase in interest that can be expected.

Each of those park activities and attractions can be matched in quality, and some of them substantially exceeded in quantity, without degradation of unique resources or conflict with extensive agricultural use in the valley of the Little Tennessee. Thus, it appears that the serious threat of stringent restrictions or loss of resource integrity in the park could be greatly reduced by a river-based recreational-cultural complex along the Little Tennessee.

Mr. FORSYTHE. Thank you.

Do you have any questions?

Mr. BONIOR. No.

Mr. FORSYTHE. I do not have any questions either. But we appreciate very much your testimony. It is all part of the very big picture that we are trying to put together here.

Who do we have next?

Ms. COOK. Sara Cook.

Mr. FORSYTHE. Fine.

#### STATEMENT OF SARA COOK

Ms. COOK. First of all, I want to thank each of you for listening to us so attentively. All of us appreciate that we have had your ear. I hope somehow we filled your ear with some things worth hearing. I know that we are all sitting here, far away from our homes in Tennessee, and it is probably hard for you all to relate to what we are talking about. But this issue is very close to all our hearts.

At this point I am pretty much frustrated. I have felt all along in this battle that we, the citizens, have been forced to bear the burden in a case where the facts have been obvious. They are obvious now and they always have been.

As I sit here today, listening to testimony and to questions—and I read the Washington Post about the 682 proposed amendments designed, once again, to cloud the real facts and issues—I am struck with two thoughts: One is that we the citizens must bear again the burden of defending the Endangered Species Act against politically motivated allegations that the law is too rigid and inflexible.

I would like to respond by stating that all along it has been the Agency involved, TVA, and not the Endangered Species Act that has blocked compromise and consultation.

Three quick examples: In 1968, TVA's Tellico project was in its early stages. A town meeting was held in Greenback, Tenn., near the project area. Wagner vowed to leave the fate of the Tellico project in the hands of the people involved, the people of the area.

He said that night that if the people voted against the Tellico project, that TVA would not begin this project. That night not one person spoke in favor of the Tellico projects. But prior to a vote being taken, Wagner cut off discussion, called for no vote, left, and immediately, land acquisition and construction began. That was in 1968.

In 1975, when we filed suit in the District Court of Knoxville, we knew then, as clearly as we know, that TVA was breaking the law. And how did TVA respond? At 4 o'clock the next morning, there were bulldozers down on the banks of the Little Tennessee River,



clearcutting, stripping, and gouging Coytee Springs, which is probably one of the most spectacular areas—trees 250 years old, big river birches and sycamores. And they were clearcutting those trees and pulling up all the trees right down to the river's edge. No buffer zone at all.

This just happened to be the area where 90 percent of the snail darters have been found, an obvious attempt to silt out that area, the prime breeding habitat of the snail darter.

A third point. Ever since we filed suit TVA has been uncertain whether the project would ever be completed. How has TVA responded? They stepped up construction to an emergency schedule of three shifts, 24 hours a day. They have spent more than two-thirds of their project costs since the discovery of the snail darter.

My second thought is this: I am convinced that both the facts and logic in the case are in our favor and shall remain so. And convincing individuals in hearings such as this is always has been one of our stronger points, due to the strength of our case and our convictions.

However, with all of this huge bureaucracy, dealing with all of these agencies and politicians, how can we get our message out? And how can we present these injustices? How can we counter the trivial, flashy, and novel coverage, all of which have dominated the news? And amid of all of this, how can we get our message to the people who vote?

My conclusion to both of these thoughts is this: We must commit ourselves to the preservation of this act, by time and effort, by massive education of the media and voters, in Washington and at home. We, the citizens of Tennessee, must recognize that we are fighting for the Little Tennessee Valley and the Little Tennessee River. We are fighting for the dignity and esteem of people of East Tennessee who have dealt with big government in the past, primarily by submission. And we must continue to fight and spread the word to keep citizen action alive, for all the people to hear and to learn from.

You people here in Washington, the ones who remain after I go home, will have to be convinced by us, and then turn around and convince other people, without falling to the wayside of political compromise and issue clouding.

And last, and perhaps this is most important at this point, we must heed and nurture the positive things that are happening now, finally.

When Herbst and Freeman issued a joint press release, saying, "We believe we will be able to reach a solution which both respects the law and benefits the economy"; when the commissioner of conservation in Tennessee just recently comes out and says that he has been against the Tellico project all along; when the judge from Monroe County—in the project area—in the Knoxville News Sentinel—on the 16th of this month, says that Freeman is going to help us; and finally when the judge of Loudon County—also in that area—states that the "economic aspects of the area can be developed just as well without a reservoir. It can be done if the TVA will just go ahead and do it"; when the tide is obviously changing within the supposed rigid confines of section 7, my only answer to

all of this is: Please leave the Endangered Species Act alone and give it a chance to work, before it is annihilated.

Thank you.

Mr. LEGGETT. Very eloquent. That is what we need in campaigns, not just people that just vote for us, but rooters.

Ms. COOK. I will come back any time.

Mr. LEGGETT. That is very difficult to plant those seeds. What we need really is foot stumppers.

Ms. COOK. We can do the Hambone and dance.

Mr. LEGGETT. We are sitting here as judge and jury, right now. I caution the committee that we cannot really participate like that.

Next is, Will Skelton of the Tennessee Sierra Club.

Mr. SKELTON. I am Will Skelton.

I am testifying on behalf of the Tennessee chapter, which has groups throughout Tennessee.

Mr. LEGGETT. Why do we not have a California Big Smoky Club, or something?

Mr. SKELTON. That would be fine. That is another bill we are porposing.

Of course the Sierra Club is the biggest in California. You know the impact in your district out there.

Mr. LEGGETT. Since we have the moutains.

Mr. SKELTON. You have got mountains, all right, equal to ours, I will say that. The Sierra Nevadas are outstanding.

Ms. HARDIN. Not as old, though.

Mr. LEGGETT. We call those the Great Smoky Hills.

Ms. HARDIN. You have obviously never visited east Tennessee.

Mr. SKELTON. We would like to invite you down to look at either the Little Tennessee or the Smokies.

We are talking about the Little Tennessee, of course, and I really appreciate the opportunity to talk to you. But more importantly, you are also listening to us when we talk about that other side of this issue.

For too many years, it seems like no one has listened to the other side. TVA has been too busy keeping the bureaucracy busy building another dam. The Tennessee politicians have been operating under the assumption that dams mean votes, I think.

And as a result nobody has looked at our side of the issue. But you all are doing that, and hopefully will continue to do that, because there definitely is another side to it.

I would like to talk about the background of the Tellico Dam controversy, a little information you might not be aware of. It was first proposed well before construction began, in 1966. There was a long delay in commencement of construction, and credit is often given to the late Senator Estes Kefauver for that delay—whom I am sure you all are familiar with.

He felt it was not economically sound, even though he was from the district or the town, really, one of the towns close to the project.

Congressman James B. Frazier, who represented the district in which Tellico was located, was also against the project. Another reason for the delay, he thought it was not necessary. But when they were gone—pretty soon thereafter construction began. And TVA of course, realizing that there was some opposition—quite a

bit of opposition—to the project, in the 1960's, restarted their public relations apparatus working. They worked overtime.

I would be interested in the amount of money spent on convincing the people of east Tennessee that this project was good for them.

We of course have on the other side concerned citizens and environmental groups, with limited staff, limited money, that kind of thing. But TVA had virtually unlimited everything, and they did a really good PR job on east Tennessee. They went down the list of benefits from promises of jobs, industrial development, all kinds of flood control, which was really meaningless, a new town to be called Timberlake—which is now rarely mentioned since Boeing Corp. pulled out and said it did not make economic sense.

They promised all kinds of benefits to be gotten out of a dam, and promised—and I think the result is that you can see that they did have some impact on the people of the Tennessee Valley.

But even aside from all of that effort by TVA, there is still opposition, as reflected by the people up here today, as reflected by activities that have been taking place over the last 6 years, two lawsuits, an organization of 20,000 Tennesseans—the Little Tennessee River Alliance, opposing the dam, enumerable bumper stickers, that kind of things, letters to the editor.

There is a significant opposition to the dam in Tennessee. Please do not be mistaken about that. TVA, of course chose to ignore all this opposition, and until recently—when Freeman was appointed to the Board—to even consider any alternatives for the dam. They wanted a dam, and a dam it would be.

There attitude, in retrospect, was obviously to finish as much of the dam as they could and in effect create—I used the word “create”—a justification for the dam, as other speakers have pointed out. “It is almost complete. So why stop now.” We have seen it here and all over the country. It is on the front page of the Knoxville paper everyday. “It is almost complete. So why stop now.”

That is not a good argument, but I think it shows somewhat the complete irresponsibility by TVA in the past.

They went ahead with their project, even though they knew there was an endangered species. They went to a 24-hour work schedule. They started cutting at the snail darter's spawning area. They started cutting timber in one of the most beautiful areas of the river. They did all these things, and worked and worked to try and create a justification for the dam.

Now they are using the argument we knew they would use, of course. The argument is without merit, as other speakers have indicated.

I would like to simply point out and summarize our proposed alternative to the dam. I do not think anyone has done that—summarize what we are proposing now.

Environmentalists and Sierra Clubs often get accused of being against everything. You are always against a dam, against a road, against this or that. But we have tried in east Tennessee to appear more positive, and to support something positive for the Little Tennessee Valley, and have put out numerable press releases. We have talked to groups, that kind of thing, on it.

What we are proposing, basically, is that a national land use demonstration area be established—you have got the land there. It is a magnificent area. Let us do something good with it, and that good, I frequently talk about in terms of dollars, when I talk to groups in the area.

What kind of dollars can you attract by a nonreservoir-type project? First of all, of course, is the tourism dollar. That is a big dollar for Tennessee. I think it is No. 2, or maybe even the No. 1 industry in Tennessee. So why can you not attract significant dollars and jobs which go along with tourism? You could have a gateway to the Smokies. It is right on the way to the Smokies. You can have archeological, historical parks—which Dr. Chapman has already talked about. You can have a variety of recreational uses that are not always compatible with the Smokies, which is a national park. Like, you can have offroad vehicles, that kind of thing, jeeps, and so forth.

You can also, of course, attract and utilize the agricultural dollar. Speakers have already testified about the significant amount of money that is produced by the agricultural land. It is not inconsistent with recreation. You can have both of them.

The industrial dollar—you can also have industry in certain portions of this area. There is one section of it, actually, where TVA plans to have their industrial park, that has rail transportation, has road transportation, has gas, all other utilities. It is just a perfect area for an industrial park.

The only thing you would not have is barge transportation, which studies have shown is almost a negligible benefit, or reason for industry locating in east Tennessee. Barges are simply not a reason for locating industry. So you could have—you could have your industry there.

And finally, most of you know that Knoxville, Oak Ridge has a tremendous research apparatus, with the University of Tennessee, Oak Ridge, and so forth, and TVA, of course. So why not attract some of the research dollars, by biomass conversion research, things like that? Why not get some of the money? So those are just a few, some of the things which we have tried to outline, which TVA can obviously do better than we could, if they would put their minds to it, for converting the project into a nonreservoir demonstration area that would benefit the people just as much.

But at the same time we would be keeping our river in its natural state, which is important for a lot of reasons which have already been given. So we think in summary that is not too much to ask, before the Federal Government proceeds with this project, before it does eliminate the snail darter—the first conscious elimination of a species—for Congress to take a good look at both sides of the issue.

When you do take a look, we feel you will utilize the Tellico Dam to reaffirm the endangered species, as originally passed.

Thank you.

Mr. LEGGETT. Thank you very much. With all the press that this project has had, the proper viewing facility, to view the existing structure, would probably draw about as many people as the snail darter.

Mr. SKELTON. I think that is exactly right.

Mr. LEGGETT. Which I guess will have to be one of the benefits that somebody cranks into the program.

Mr. Forsythe, any questions?

Mr. FORSYTHE. No. Thank you, Mr. Chairman.

I do thank all the panel.

Mr. LEGGETT. Mr. Bonior?

Mr. BONIOR. No.

Mr. LEGGETT. Very pleased to have the former chairman of the subcommittee here.

Mr. Plater, very good.

Mr. PLATER. Thank you very much, Mr. Chairman.

Mr. LEGGETT. I have your additional comments from the Washington Star.

Mr. PLATER. We have to try every media chance we can get.

Mr. LEGGETT. I know that.

Mr. PLATER. This is a very strong constructive argument, but all that comes across is a burlesque of the endangered species story. It is a very serious, factual issue, and deserves every consideration.

Ms. Cook. Could you just tell me what happens next?

Mr. LEGGETT. This is just an oversight hearing. Witnesses are really not allowed to ask questions. Mr. Dingell told me that years ago.

But anyway, just wait and see what develops. It should be interesting.

Thank you very much.

Mr. LEGGETT. Now we have Roland Fischer of the Colorado River Conservation District.

**STATEMENT OF ROLAND C. FISCHER, SECRETARY-ENGINEER, COLORADO RIVER WATER CONSERVATION DISTRICT, ACCOMPANIED BY ROBERT L. McCARTY, SPECIAL COUNSEL**

Mr. FISCHER. With the permission of the Chair, I would like to ask my associate, Mr. Robert McCarty, to sit at the table with me, if I may.

Mr. LEGGETT. All right.

Your statement, including the exhibits, of which I understand I have only a copy, will be included in the record at this point. You may highlight as you care to.

[The statement follows:]

**STATEMENT OF THE COLORADO RIVER WATER CONSERVATION DISTRICT**

Mr. Chairman Leggett and members of the subcommittee: The Colorado River Water Conservation District's statement and associated oral testimony will be presented by Roland C. Fischer, Secretary-Engineer of the District: he will be accompanied by Robert L. McCarty, Esq., the District's special counsel. We also submit three additional items addressing the subject of today's hearing, copies of which are being made available to the Subcommittee staff and which we request be made a part of the record. They are: (1) A statement prepared by the District's general counsel, Mr. Kenneth Balcomb, (2) A copy of a letter of April 27, 1978 from the District's special counsel, Mr. Robert McCarty to Senator Culver addressing S. 2899, and (3) A copy of a June 9, 1978 letter from Mr. Balcomb to the Director (OES) U.S. Fish and Wildlife Service commenting on proposed rulemaking involving the bonytail chub and razor-back sucker.

The Colorado River Water Conservation District (River District or District) is a public agency of the State of Colorado and a municipality within the meaning of Section 3(7) of the Federal Power Act, 16 U.S.C. § 796(7). The District was established in 1937 by Act of the Colorado State Legislature (Colorado Rev. Stat.

§ 37-46-101 (1973) for the purpose of conserving and developing the waters of the Colorado River and its tributaries within Colorado and "... to safeguard for Colorado, all waters to which the State of Colorado is equitably entitled under the Colorado River Compact". The District includes all of 12 and parts of 3 counties in western Colorado and is the major water policy agency of the State regarding the principal headwaters of the Colorado River.

In this statement we address problem areas associated with the Endangered Species Act and suggest remedial action for consideration by the Subcommittee. Most of our experience with the act involves this district's proposed Juniper-Cross Mountain Project, a water resources conservation and hydroelectric facility to be built on the Yampa River, southwest of Craig in Moffat County, Colo. The project is the subject of a preliminary study permit and is designated FERC (formerly FPC) No. 2757. Most of our remarks are directed to endangered and threatened fish species, though we do briefly address endangered or threatened plants.

One of the basic concerns this district has with the Endangered Species Act involves its implementation. At this time it appears that the administration of the Act is hampered by tunnel vision with the result that development, conservation and beneficial use of water (and other) resources is being seriously restricted. It appears not enough mature thought is given to benefits other than endangered species. The listing of a species under the act and the rules of the Department of Interior coupled with single-minded administration can and is causing major economic disruptions. We request the subcommittee review the present methods of implementation and administration with a view to providing means for considering and giving value to the benefits of development in the review and decision process.

While it may be technically true that none of the prohibitions in the Endangered Species Act can be enforced until wildlife and/or plants are officially listed as endangered or threatened for practical purposes this is not the case. Specifically, we cite the example of a letter written to the Colorado River Water Conservation District, January 30, 1978, from the U.S. Fish and Wildlife Service, addressing the consultation requirements in the district's FERC permit for Project No. 2757, Juniper-Cross Mountain project. A copy of the letter is attached and from it the Subcommittee can see that in addition to the tone of the letter being adversative, it includes the requirement to assume the existence of rare plants ("My staff has informed me that it is likely that the project area has such rare plants") even though there was and is not any objective scientific evidence of their existence in the project area. Responsible biologists tell us that there is no comprehensive list of western Colorado plants in existence. The possible presence of a there-to-fore unknown plant (ala the Furbish Lousewort) is hardly a scientific basis for making decisions. "Likely" carries approximately equal scientific authority with "maybe" and "perhaps". We request the subcommittee address this kind of administration of the act and provide guidelines that require objective, scientific administration.

There are no congressionally-mandated guidelines in the act that we can find to help the Fish and Wildlife Service make critically important decisions concerning endangered species. Perhaps this is because the Congress feels ill-equipped to address the complex and varied biological nature of fishes, animals and plants. Nevertheless, the policies of these determinations should not be left to the whims of agency personnel who are not subject to the elective process. However, the act appears to us to be deficient in that it does not permit the Department of Interior or Fish and Wildlife Service to take human values into account in selecting species for protection and it does not appear to provide a congressionally-mandated method of choosing which groups of plants and animals to protect. Instead it appears that the listing of an animal or a plant as endangered or threatened is a very subjective exercise in judgement, often for personal reasons or prejudices. Even though there are rulemaking procedures, the public is not generally aware of them and has little opportunity to effectively comment in the limited time permitted. In many cases very little is known about the species proposed for endangered or threatened classification and it appears, therefore, that the Fish and Wildlife Service proceeds on the theory that it is better to add the species to the list because a plant or animal could be taken off the list but it can not be brought back from extinction. This is a poor premise upon which to permit the Fish and Wildlife Service to charge an American citizen with a criminal violation. We request the subcommittee address this problem.

The designation of "critical habitat" is another area that deserves congressional study. The act itself does not seem to be clear about whether critical habitat should be designated for each species on the list or just how the determination of critical habitat is to be made. For example, water resources activities outside of areas which could reasonably be anticipated to be designated "critical habitat" are often claimed

by the Department of Interior to be damaging; even when no critical habitat has been designated. Critical habitat can be used, or in fact misused, to ends or policies not set forth in the act and without the benefit of open congressional debate.

The designation of endangered status and critical habitat can be conflicting with other responsibilities even within the Department of Interior. In the Federal Register (Volume 43, No. 79) for Monday, April 24, 1978, on pages 17375, 17376, 17377,<sup>1</sup> is a proposed rule to determine that the bonytail chub be listed as endangered and the razorback sucker be listed as threatened. The notice raises questions, including the question of who should be responsible for actually determining the status and listing of rare and endangered species. For example, the canyon areas in the Upper Colorado River Basin may hold rare species and the notice mentions Desolation Canyon of the Green River. We are told by a biological consultant it is the only area in the Upper Colorado River Basin where the bonytail chub is presently known. However, apparently no one wants to take the responsibility of actually sampling the canyons to make a specific determination. A private organization or a quasi-municipal corporation, like the Colorado River Water Conservation District, should not be held responsible for conducting and paying for the work to find endangered species and then because of their own good efforts be blocked from building a water resources conservation project (specifically the Juniper-Cross Mountain Project, FERC No. 2757), although this does appear to be the interpretation of the act by the Fish and Wildlife Service. It would seem to make more sense that the information should already be available and be objectively presented for the use by the primary federal agency involved and the organization or persons proposing to construct the project, in the instance the FERC and Colorado River Water Conservation District, respectively. At this time it appears to us that the existence of an endangered species may not actually be known because the federal agency theoretically responsible for the determination, the Fish and Wildlife Service, has not made the effort to study the species' true status before proposing listing or actually listing a species as endangered or threatened. In the case of the Colorado River squawfish (listed as endangered), it appears that the Fish and Wildlife Service has spent hundreds of thousands of dollars on esoteric studies. Some of those funds should have been used specifically for better documentation of the actual of that fish.

The Fish and Wildlife Service is actually the agency assigned to the protection of endangered species and it might be well for it to analyze the occurrence of the squawfish in the back waters of the Colorado River Basin, to learn about the habitat, why the fish are there, and how their abundance might be increased so the squawfish can be removed from the list as provided for in the act rather than taking a hard line negative stance on construction of water conservation projects without a firm objective scientific basis. For example, the fish has been successfully reproducing in a backwater resulting from gravel excavation for Interstate Highway 70 west of Grand Junction, Colorado but to our knowledge no objective analysis of the "why's" has been made. We request the subcommittee address such issues as setting policies for the determination and thorough sampling of species before listings are finalized so that better information will be available on the true status of "endangered" or "threatened" fishes like the Colorado squawfish, humpback chub, bonytail chub and the razorback (humpback) sucker.

We think it is possible that the Secretary of Interior may actually be in violation of the Endangered Species Act. In the April 24, 1978 Federal Register it is stated that in addition to dam construction which is said to be threatening the existence of 4 species of endemic Colorado River fishes, there is at least one other man induced threat to their existence. This is the introduction of exotic species which are claimed to outnumber the native species in the Colorado River Basin. The exotic species include bass, trout, and other game fish. The introduction of the exotic species is at present partially funded by the Fish and Wildlife Service in all of the former and present range of the native species. The Department of Interior is also currently engaged in promoting uses of water for domestic, energy and other industrial purposes in apparent disregard of the possible consequences of these activities on the endangered and threatened fishes. From all that is presently known of the affected Colorado River fishes, the consequences of the continued stocking of exotic species in the present and former ranges of the endemic endangered species and the construction of dams are said to be equally deleterious. It appears possible that the Secretary of Interior should not condone or participate in one unlawful activity (stocking exotic species in the endangered habitat) and prohibit another (harrassment of endangered species under section 7 of the 1973 Endangered Species Act). We request the subcommittee review this apparent inconsistency.

<sup>1</sup>See the previously mentioned letter of June 9, 1978 by the District's General Counsel commenting on the proposed rule.

As the subcommittee knows, the U.S. Senate has held hearings on the Endangered Species Act. The Senate is considering amendments, among them S. 2899, to the Endangered Species Act and we believe S. 2899 has been reported out of the Subcommittee on Resource Protection of the Committee of Environment and Public Works of the Senate. We do not agree with the approach taken in S. 2899 and have commented in the previously mentioned letter of April 28, 1978 by River District special counsel Robert L. McCarty.

Based on our experience with the Endangered Species Act, we request that further appropriations to carry out activities under the Endangered Species Act of 1973 not be authorized until the problems and conflicts with the act and its administration are resolved to the satisfaction of Congress.

We request that the "veto" provided by the courts to the Department of Interior over issues involving endangered species should be specifically deleted and that the final decision resolving potential conflicts between endangered species and the construction of valuable facilities and projects should be the responsibility of the primary agency, although there is certainly no objection to providing for consultation with the Department of Interior. However, at this time it appears that programs under the Endangered Species Act do not warrant continued appropriations until the administration of the act is clarified and provisions are made for more objective resolution of conflicts under the act.

Thank you for the opportunity to appear.

---

U.S. DEPARTMENT OF THE INTERIOR,  
FISH AND WILDLIFE SERVICE,  
Colorado, Feb. 1, 1978.

Mr. ROLAND C. FISCHER,  
*Secretary-Engineer, Colorado River Water Conservation District,  
Genwood Springs, Colo.*

DEAR MR. FISCHER: This letter is in reply to your request for a written document stating the extent of consultation and information exchanged between the Colorado River Water Conservation District (CRWCD) and the U.S. Fish and Wildlife Service on the Juniper Cross Mountain proposal (FPC No. 2757).

Our Service in Region 6 has met specifically to discuss the subject project with representatives from CRWCD twice during the month of January 1978. Prior to these meetings, representatives from CRWCD attended at least three Colorado River Fishes Recovery Team meetings to discuss the project and the endangered Colorado River fish species, Colorado squawfish and humpback chub. Although the Service sponsors the various Endangered Species Recovery Teams, the teams themselves are not a branch of the U.S. Fish and Wildlife Service, but operate in an advisory capacity. Therefore, contact with this Region concerning this specific project has been limited to the two January meetings.

We must point out that the consultation and information exchange could have been greatly improved if you would have contacted us sooner. We have on file a letter to you dated May 31, 1977, sent by the Environmental Project Review Director, U.S. Department of the Interior, in reply to your letter of May 13, 1977, requesting the names of individuals to be contacted for consultation. That May 31 letter answered that you should consult with the Regional offices and gave the names and addresses of the appropriate Regional Interior Department agencies and people to contact, including myself, for consultation and information exchange on this project. Your first contact with our Regional personnel was the week of January 15, 1978.

I believe it is appropriate in this letter to establish that we have not been involved with the CRWCD in the formulation of any detailed fish and wildlife study proposal for the subject project. It is our interpretation of Article 10 of the Terms and Conditions of the February 1977 FPC order issuing the Preliminary Permit (copy attached) that our Service will have direction over the types of studies to be undertaken and in the selection of personnel to conduct the study. Therefore, I encouraged you to meet with our Salt Lake City Area Office personnel for the purpose of drafting a detailed fish and wildlife study proposal for this project. Also, because a number of resource management agencies, both Federal and State, are charged with managing the resources of the project area, I encouraged you to consult with them to discuss the fish and wildlife study proposal and to exchange information concerning the project. I furnished you a list of the agencies I believed should be represented in these discussions at a recent January 25 meeting here in my office. I understand that the technical staff of the Federal Energy Regulatory Commission (FERC) (formerly the Federal Power Commission) also has expertise in



these areas and suggest that you consult with them as part of the planning process for the actions and studies that you are mandated to fulfill under Articles 7, 10, and 12 of the Federal Power Commission (FPC) order. These contacts should be made before any study plan is finalized.

The FPC Permit-Article 12 contains special instructions for your handling if the endangered and threatened fish species of the Colorado River during the permit period. We interpret these instructions to mean that you were to have prepared a plan in consultation with our Service indicating what detailed work the CRWDC will be doing in the project area during the permit period and what steps and precautions will be taken to ensure protection of these endangered and threatened fish species. To our knowledge, these Article 12 requirements have not been completed at this time.

In addition, I would like to call your attention to Article 7 of the FPC Permit. We interpret the first part of this Article to mean that you should consult with the appropriate agencies, including the U.S. Fish and Wildlife Service, to develop a program for your investigations which would avoid damage or destruction to natural resources and the environmental values during the 3-year permit study period. Our Service is specifically concerned about possible impacts to rare plants and destruction or riparian and terrestrial habitats which will occur in the project area. My staff has informed me that it is likely that the project area has such rare plants. We interpret the second part of that Article to mean that you were to have prepared a plan under our and other appropriate agencies' direction for a study to determine the impact the Juniper Cross Mountain project will have on the natural resources and environmental values in the project area and the measures needed to preserve, develop, replace or mitigate damage to these resources and values. To date we have not been consulted on these matters.

I wish to assure you that we in the U.S. Fish and Wildlife Service are quite willing to work with and assist you on the above studies in the determination of the impacts of this proposed project on fish, wildlife, and natural resources of the project area.

Sincerely yours,

HARVEY WILLOUGHBY,  
*Regional Director.*

Mr. FISCHER. Thank you very kindly. We did submit those statements to the staff earlier. We have also supplied the staff and committee with the requisite numbers of copies of our statement.

I would like to summarize and add to my written statement.

The Colorado River Water Conservation District is a public agency of the State of Colorado and a municipality within the meaning of section 3(7) of the Federal Power Act. The district was established in 1937 by act of the Colorado State Legislature for the purpose of conserving and developing the waters of the Colorado River and its tributaries within Colorado. Literally all of Colorado's oil shale resources are included within our boundaries. A great deal of Colorado's available coal resources are included within our boundaries.

In our statement we would like to add to the problem areas associated with the Endangered Species Act, of 1973, and we would like to suggest remedial action for consideration by the subcommittee.

Most of our experience with the act involves this district's proposed Juniper-Cross Mountain project, a water resources conservation and hydroelectric facility to be built on the Yampa River, southwest of Craig, Colo.

The Endangered Species Act does have within it the seeds of preventing the Western United States from properly utilizing its water resources, can seriously cripple Western agriculture, and can certainly have adverse impact on farms, indeed, on consumers—especially consumers of agricultural products and electrical energy.

We have observed that there appears to be a lack of scientific integrity with the use of unsupportable assumptions to arrive at fixed conclusions. Most often, in connection with the Endangered Species Act, our experience comes largely from within the Colorado River Basin. Much of our concern with the act has to do with the administration of it.

We believe, Mr. Chairman, that we have several examples of the act in its administration that is hampered by tunnel vision. It appears that not enough mature thought can be given under the act to the advantages of resource conservation and development, other than the preservation of endangered species.

We believe that the Department of the Interior, under the act and rules of the Department, coupled with the single-minded administration, of the act is causing economic disruptions. And we request the subcommittee to review the present methods of implementation of the act and its administration, with a view of providing means for consideration of other benefits.

We would like to comment, if we may, that the Department of the Interior, without consultation, Mr. Chairman, opposed the issuance of the preliminary study permit for the Juniper-Cross Mountain project. We think the act did provide for consultation. We were not given the advantage or the opportunity. Although it may be technically true that none of the prohibitions can be enforced until the wildlife and plants are officially on the endangered list, we would submit that for practical purposes, and as a practical matter, that is not the case. We have attached a letter from the Fish and Wildlife Service to the River District, wherein we were required to assume the existence of endangered plants in the project area, when in fact there is no comprehensive list of plants in Western Colorado.

We request, if we may, that the subcommittee address this kind of administration. You will not the letter says that Regional Director Willoughby stated that his staff informed him that it was likely that the plants existed and that it is likely that the project area has such rare plants. "Likely" has the same scientific integrity as words like "maybe" and "perhaps."

There are no congressionally-mandated guidelines in the act to help the Fish and Wildlife Service make critically important decisions concerning endangered species. We find that the decision are very often very subjective exercise in judgement, and we find that the Fish and Wildlife Service has probably assumed that it is better to put a plant or species on the endangered list, and to err on the side of conservatism, when this in fact may not be justified. And we believe, Mr. Chairman, that this is a poor premise upon which to permit the Fish and Wildlife Service to charge an American citizen with possible criminal violation.

We request the subcommittee address this problems.

We also have a problem with the designation of critical habitat. At that time we found, for example, that water resources activities outside of areas which could reasonably be anticipated to be designated critical habitat are often claimed by the Department of the Interior to be damaging, even when no critical habitat has been designated. Critical habitat can be used, or in fact misused, to ends

or policies not set forth in the act and without the benefit of open congressional debate, Mr. Chairman.

The designation of endangered status and critical habitat can be conflicting with other responsibilities, even within the Department of the Interior. And in fact, we find in the Federal Register for Monday, April 24, 1978, a proposed rule to determine that the bonytail chub be listed as endangered and the razorback sucker be listed as threatened.

These raise questions about who should determine the status by whom should it be done? We believe that an organization, whether private or quasi-municipal, should not be charged with the responsibility of carrying out the work which is more properly that of the agency involved, the Fish and Wildlife Service, to make these findings. Our own work should not be used to prevent the construction of water resources projects.

Consider, in the case of the Colorado River squawfish, for example, which is listed as endangered, we find the Fish and Wildlife Service has spent hundreds of thousands of dollars in esoteric studies, when in fact very little work, very little money has been spent to determine the actual status of the fish.

Our own biological consultant, who is a consultant to the recovery team, has found—and we believe it is true—that the Colorado squawfish if left alone, and nothing is done, will in fact be extinct by approximately the year 2000, when our water resources project could in fact include facilities for mitigation which could possibly help the squawfish to survive.

We find a hardline attitude in the Fish and Wildlife Service against construction of almost any facility. We find also that the Fish and Wildlife Service, and others, have taken part in the past, and are today taking part in eradication efforts in the State or Washington, to eliminate a kind of squawfish. And in the past, the Colorado Division of Wildlife poisoned the rivers to rid some Colorado rivers specifically the Yampa and the Green and Utah, of what was then considered to be a trash fish. Perhaps the fish is partly on the way to endangerment, because of efforts of various Fish and Wildlife Services both State and Federal.

We would like to request the subcommittee to address such issues as a national policy for a thorough sampling of species before listings are made. Gentlemen, we think that it is possible that the Secretary of the Interior may in fact be violating the Endangered Species Act today. The Secretary of the Interior has, on April 24, 1978, in the Federal Register, pointed out that there are two things which have added to the decline: the construction of dams and introduction of exotic fish.

The Secretary is participating in introducing exotic game fish, including bass, trout, pike, pickerel. At the same time he condemns the construction of the dams. We find that although it is claimed that dams are contributing to the decline of squawfish, yet in Lake Mead which was closed in 1937, we find the existence of this very species listed in the April 24, 1978 Federal Register.

We wonder if the Secretary should condone or participate in one unlawful activity, such as stocking exotic species in an endangered habitat and prohibit another claimed harassment of endangered species under section 7 of the 1973 Endangered Species Act.

We request the subcommittee to look into this apparent inconsistency.

The subcommittee is aware that the Senate has held hearings on the act, and that S. 2899 is proposed as an amendment. Gentlemen, we do not agree with S. 2899. This approach has been commented on in one of the letters submitted for the record, this is Mr. McCarty's letter of April 28, 1978.

Mr. Chairman, and members of the Committee, based on our experience with the Endangered Species Act, we request that further appropriations to carry out activities under the Endangered Species Act of 1973 not be authorized until the problems and conflicts with the act and its administration be resolved to the satisfaction of Congress.

We also request that the veto provided by the courts to the Department of the Interior over issues involving endangered species should be specifically removed and that the final decision resolving potential conflicts between endangered species and the construction of valuable facilities and projects should be the responsibility of the primary agency, although there is certainly no objection to providing for consultation with the Department of Interior.

We believe that decisions concerning the endangered species can be handled very well, as the act previously was. There are provisions in the present statutes or the statute prior to 1973, that provided for consideration of the existence of endangered species, both plant and animal, while the agency carries out its primary function. We believe that this is a good approach.

It appears at this time that the program, under the Endangered Species Act, does not warrant further funding. And we request that the full Congress not further fund the activities of the Endangered Species Act until all of the apparent inconsistencies and problems are resolved.

Mr. Chairman, thank you for the opportunity to testify.

Mr. LEGGETT. Thank you very much.

Let me ask you about this Juniper-Crossing. Is that a water impoundment project?

Mr. FISCHER. The Juniper-Cross Mountain project is such a project.

Mr. LEGGETT. How much?

Mr. FISCHER. 1,142,000 acre feet for the Juniper Reservoir feature of it. It is a FPC power site withdrawal, which was withdrawn prior to 1920.

Mr. LEGGETT. Do you have a power license?

Mr. FISCHER. We have a preliminary study permit, which is the first stage, Mr. Chairman, as you well know, prior to the issuance of a license, and allowing a 3-year maximum study period. The necessary studies are done and submitted, including final design, to the now Federal Energy Regulatory Commission, for the issuance of a license by that body.

Mr. LEGGETT. Who would actually put up the money for the construction?

Mr. FISCHER. The Colorado River Water Conservation District would be responsible for the supply of money, through a power sales contract, the issuance of revenue bonds.

Mr. LEGGETT. Would there be flood control benefits?

Mr. FISCHER. Some flood control benefits. The Yampa is known as a flooding river.

Mr. LEGGETT. Is the Corps of Engineers studying the project?

Mr. FISCHER. They have not but for a permit, some study by us is required. We are keeping the corps in Sacramento informed of our activities.

Mr. LEGGETT. How much have you spent on the project at this point?

Mr. FISCHER. Mr. Chairman, I regret I have not brought that data with me. I believe that amount of money, we spent on the project, so far, is between \$100,000 and \$200,000.

Mr. LEGGETT. So the total cost of the project would be what?

Mr. FISCHER. About \$65 million.

Mr. LEGGETT. And now, what have you done, after this letter of February 1, which recites that the three Colorado River fishes recovery teams had met with you? And those teams are not employees of the Fish and Wildlife Service?

Mr. FISCHER. Yes, sir. Almost everyone of those persons, with the exception of those working for the State of Colorado, are employees of the Fish and Wildlife Service.

Mr. LEGGETT. And so they suggest here a rather elaborate study procedure. Of course, they do make reference to the rare plants. But despite this fact, they do make reference to some elaborate study procedures to indicate that they would like to help you study. They indicate that you ought to contact the Salt Lake City office.

Have you done any of these things?

Mr. FISCHER. Yes, sir. We were in touch with the Fish and Wildlife Service, through the Colorado River Fishes Recovery Team, even prior to the application to the Federal Energy Regulatory Commission, for the study permit.

Our most recent effort was in the field in June of 1978, with a baseline inventory of plants.

However, I would like to quote from a letter from the Department of the Interior, which was sent January 14, 1976.

At the present time there is every likelihood that the Department would oppose the construction of project 2757, based on the anticipated destruction of habitat which is considered to be critical to endangered species.

So Mr. Chairman, we have a clearcut and early stated opposition by the Department of Interior, and their written intent to oppose the project.

Mr. LEGGETT. Well, the way the law has been interpreted under section 7, I suspect that the caution evidenced by the Department was probable well placed, less you find yourself without an amended law, and with a very large investment aiming toward that \$65 million expenditure.

Mr. FISCHER. Mr. Chairman, you are right. That is the reason we are here today. We are here to request this subcommittee to help the Western United States conserve its own water resources, not with an Endangered Species Act that is gutted and made inoperative, but with an Endangered Species Act that permits the Secretary—and/or the responsible Federal agencies—to take into consideration human needs as well as those of the endangered species.

We heard testimony here today, I believe Mr. Chairman, that the Endangered Species Act was used in Tellico, not in all cases out of a concern, legitimately, for the snail darter, but also for other purposes, including the prevention of construction of water resources projects.

We are getting this in western Colorado. We have had Federal employees tell us they intend to do this, and we wonder if that was the congressional mandate. We think that there is plenty of room for a reasonable Endangered Species Act. But the Department of the Interior, Mr. Chairman, is undergoing massive investigations to lease coal resources in northwest Colorado.

Water resources conservation has been provided for under the 1922 and 1948 Colorado River Compacts and withdrawal of power sites such as Cross Mountain. The associated hydroelectric and water conservation facilities, we think are also important. They are important to the people of the western United States, western Colorado, and indeed the entire country.

Mr. LEGGETT. Now, this Colorado squawfish and humpback chub, are both of them listed?

Mr. FISCHER. Yes, sir.

Mr. LEGGETT. How would this project, according to your current study, impact those two endangered species?

Mr. FISCHER. We believe, Mr. Chairman, that with proper management of this project, we can enhance the life of these two fishes. We think that the Colorado River squawfish, based on competent biological, technical analyses, I believe we—the Colorado River squawfish life can be enhanced and expanded.

Mr. LEGGETT. Well, that being so, we have not listed many plants, as of this point.

Mr. FISCHER. Will you tell Mr. Willoughby that, sir?

Mr. LEGGETT. Well, I am sure he is aware of that. He, of course, was making comment on some of congressional policies.

Counsel wants to make a statement.

Mr. THORNTON. My comment, Mr. Chairman, relates to page 5 of the witness' statement, where he indicates that the Department of the Interior has a veto over projects impacting on endangered species. But in fact, the regulations issued in January of this year indicate that that is not the case. Page 871 of the Federal Register, of January 4, 1978, indicates that the final decision of whether or not to proceed with the action lies with the agency itself, and not with the Department of the Interior.

Mr. FISCHER. Mr. Chairman, if I may, we believe that case law may be otherwise.

Mr. LEGGETT. Well, under the current law, as I understand, no Federal agency can take any action which would jeopardize rare and endangered species.

So if there are endangered species in this area, they would not be enhanced by this water project. If the Department commented on that, I would suspect that that would have the effect or precluding any additional Federal action, which would be like the Corps of Engineers assistants or approval, is that right?

Mr. THORNTON. As I understand the regulations, Mr. Chairman, the biological decision of whether a particular action may violate

section 7, is left with the developing agency, rather than with the Department of the Interior.

They are mandated to consult with the Department of the Interior, and of course the Department's findings would be some evidence of whether there has been a violation.

But the final decision is in fact left to the developing agency.

Mr. LEGGETT. And of course, their efforts.

Mr. THORNTON. Exactly.

Mr. McCARTY. I would like to point out, in connection with the Supreme Court opinion of just last week, that provision of the regulations or similar provision was averted to, and it was also noted in the footnotes of the Court's opinion, that following the decision of the sixth circuit in this case, that that provision of the regulations was withdrawn.

I think it is pretty clear, from the opinion of the Supreme Court, now——

Mr. THORNTON. Excuse me.

Mr. McCARTY [continuing]. That the construction of this statute, by the Court, just leaves no room for an agency to do anything as long as there is a declaration of an endangered species. There is no flexibility whatsoever.

It is uncompromising, and there is no room for balance, under this opinion.

Mr. LEGGETT. Well, whether or not there is an endangered species present is a matter of fact. And the question would be whether or not the project would adversely impact on the endangered species. That would be a subjective matter which would be subject to some type of review.

Mr. McCARTY. The declaration under the statute presently, Mr. Chairman, is left to the Secretary, and the Secretary makes that declaration under the opinion of the Court. That is the end of it.

Mr. LEGGETT. Well, do you want to read the part which says that?

Mr. McCARTY. The reference to previous provision of the statute, that agencies might be able to comply with the purposes of the statutes, insofar as practicable and consistent with their primary purposes, is discussed in the opinion of the Court.

Unfortunately, I do not have the slip opinion here. I have only the Law Week copy. But it appears there at page 46 in Law Week, and the Court discusses the legislative history, including the previous provisions in the statute, both in the 1966 and 1969 law.

But this, although it was contained in the statutes and in the bills that were offered to the Congress in 1973, and was the position of the administration, those provisions were deleted as the statute went through Congress, without any real statement with regard to them in the various committee reports.

In any event, at the completion of the process, it was quite clear, under the discussion in this opinion which says flatly that the plain intent of Congress in this statute was to halt and reverse the trend toward species extinction, whatever the cost.

So if there was a declaration as endangered or threatened, that was all that was necessary.

Mr. LEGGETT. Well, perhaps we are saying the same thing. If the species is, in fact, endangered, and if the project does in fact impact

on it adversely, then that is all that the statute requires. That action is precluded.

But the question of whether or not a resource impoundment impacts on a species adversely is not subject to any dogmatic technical field by the Secretary of the Interior or anybody else. It is a question of fact, over which the agency may find itself in court.

Now, everybody admits that the Tellico project would cause an adverse impact. The value of the species is not subject to any kind of review. And as a result, Federal assistance, through TVA—or other agencies—is precluded.

We have reviewed with the Corps of Engineers a number of projects which they have authorization to construct. Many of these projects interface with endangered species, and it is the corps view that through various kinds of accommodations, no particular project will have to be aborted. They are going to provide to the subcommittee a completed analysis of all their pending problem areas that they are currently studying.

So in this case, it may very well be that you are dealing with an uncooperative regional director. Based on the probabilities, he is probably a longtime civil servant, not a political appointee. He has a number of caveats in his correspondence. He did indicate a number of places that he intends to cooperate with you in the studies?

So the question would be: Have you furthered those offered studies? Have you spent any more money with them? Have you been to Salt Lake City?

If you have those folks out to your area, do you have any plan of study that you would want to undertake?

Mr. FISCHER. Mr. Chairman, if I may, first of all, I would like to, for the record, point out that it is not Mr. Willoughby who has very probably written the text of that letter. Mr. Willoughby is a longtime civil servant. He is not a political appointee. He is very accommodating and a very capable technician.

The letter, in my opinion, was written by adverse staff. We have submitted a plan of study. We are in deep negotiations with the Colorado Division of Wildlife, they may be the primary contractor, to conduct certain phases of the study.

Our biologists are acceptable by both the State of Colorado and the Fish and Wildlife Service. We have been advancing the project in the last week in the field, as I say, June of 1978.

Mr. Chairman, my board, however, feel, that to continue to invest large amounts of money, on the likelihood of having our own data turned against us—as is very often the history of the Department of the Interior, and Fish and Wildlife Service—is not wise stewardship of public funds in the State of Colorado. And we come here today to try to point out to the committee, with facts that perhaps the act could be wisely amended, to provide for consideration of other than endangered species values.

We are finding that very often the technicians, on the level of Fish and Wildlife Service, are not nearly as cooperative as Mr. Willoughby. And I do not know how to get around that.

Mr. LEGGETT. What kind of amendment are you suggesting?

Mr. FISCHER. I am suggesting the kind of amendment, Mr. Chairman, that would permit the primary Federal agency to make the



decision, without the veto of the Department of the Interior, as provided by the courts, and apparently interpreted by the U.S. Supreme Court.

Mr. LEGGETT. What would do to section 7.

Mr. FISCHER. Mr. Chairman, if I defer to my associate, Mr. McCarty, on that.

Mr. McCARTY. Well, I think, Mr. Chairman, if the committee would consider returning to the language that was in the statute in 1966, in 1969, allowing the agencies themselves to make the decisions and take some actions with regard to these species, insofar as practicable and consistent with their primary purposes, it would assist the situation.

So far as I know, it has not been shown that under that sort of language—with the agency being able to act in that kind of fashion, that it was harmful insofar as the endangered species are concerned.

Now, the 1973 act provides, at least one very affirmative check on what the various departments might do when they pursue their statutory programs. Certainly they have to take consultation into account. Certainly it must be bona fide. Nobody could object to that.

But having done it, and having made their decision, then if someone disagrees with them, thinks that it may have been arbitrarily and capriciously arrived at, the citizen suit provision provides that it could be reviewed.

Furthermore, there is the oversight, insofar as this committee and all the substantive committees of Congress are concerned, to add another check and balance to any agency that may go hogwild, in effect, and ignore the mandate of the statute.

But as it is now, at least as I read the opinion of the Court, if there is any way in which an endangered species might be involved—and they are growing and are bound to grow—the entire program of the Government, in effect, stipulated in all of the statutes, and given to the various agencies, to foster and protect as best they can.

The entire program becomes subject to whatever the Secretary of the Interior wishes to do. And I do not think the Congress really intended that.

Mr. LEGGETT. Well, I do not think we intended to give anybody a veto and our counsel does not read that section like you indicated. We do give the power to the Secretary to declare species endangered, and certainly somebody can bring a lawsuit to force a listing.

The next finding, of course, has to be whether or not the project, in fact, works adversely against the species. And there again, the agency is the one that is going to make the last determination, and that may well be if the Secretary of the Interior determines against the project. It would be very difficult to get Federal assistance out of the United States, with that kind of declaration, without going to court.

Mr. McCARTY. That is the practical problem, I think, Mr. Chairman, that we are all faced with. It would be very difficult to get an agency determination with regard to any project facing that.

Mr. LEGGETT. Well, assuming that this did not involve the snail darter, but involved the last three grizzly bears, that were in some kind of compatible environment with the last three buffalos, and it was in that area that was the last reasonable habitat for those species. Assume that your 1.1 million acre foot project—which is not really very large—would flood that out. Then how would you work your feasibility test, if the agency can determine whether or not the project proceeds, based on protecting these animals to the maximum extent practicable?

Then what is the next step?

Mr. FISCHER. Mr. Chairman, may I ask a question at this point?

Mr. LEGGETT. Now, maybe I am burlesquing the example, but those are the situations that we have to be concerned about.

Mr. FISCHER. We have in the Colorado squawfish and humpback chub, the persistent commentary by the Recovery Team and Fish and Wildlife Service that this is the last habitat. That it may be a critical habitat for the Colorado squawfish, humpback sucker and razorback sucker. And yet they constantly find them in so many other places. I do not know how they could be endangered. For example gravel was excavated for Interstate 70 and suddenly the excavation is replete with two of these fishes, the squawfish and the humpback chub. And the Wildlife Service has not addressed why they are there, and how they got there. But instead, they spend their money on esoteric studies like the selective spawning curves.

All they have got to do is go down there and figure out why these species are there, and figure out what we can do to help encourage the growth of this fish and in fact, under the act and intent of the act, the fish might come off of the endangered species list.

Now, as to the buffalo and grizzly bear, I do not know, but in your example, is there anybody going cold and hungry?

Mr. DINGELL. Mr. Chairman, would you yield to me?

Mr. LEGGETT. Mr. Dingell.

Mr. DINGELL. I was born in Colorado, and I have a recollection that the last grizzly bears departed your State. And I am also aware that the buffalo once roamed in large number, and no longer do so.

Mr. FISCHER. In western Colorado? Buffalo?

Mr. DINGELL. Buffalo in western Colorado. Also more in the eastern part. But you found grizzly bear all over the State. And you do not find either one there.

Mr. LEGGETT. Was this when you were a boy?

Mr. DINGELL. No. This was before my time.

I wonder if you would view the departure of the grizzly bear, buffalo, with the same calm that you view the departure of the snail darter or the chub or the squawfish from Colorado?

Mr. FISCHER. Mr. Dingell, if I may, we do not view the departure with calm, of the fish or snail darter. What we do is suggest that in the case of the squawfish and the chub—without knowledge of the snail darter—we have what we believe to be high integrity, scientific consultation, that indicates that we can enhance the species.

As for the grizzly bear, I did not know that we had grizzlies around—certainly we still have Browns, and some other species of bear.

Mr. DINGELL. White River National Forest used to have a lot of them, some of the biggest and best.

Mr. FISCHER. I just did not know that, Congressman Dingell.

Mr. DINGELL. Mr. Chairman, if I could persist—

Mr. LEGGETT. Surely.

Mr. DINGELL. The Colorado River Water Conservation District, can you tell me a little bit about it. Who funds you?

Mr. FISCHER. We are funded by a tax on all the property within the boundaries of the district, which is all of 12 and parts of 3 more western Colorado counties and all the principal headwaters of the Colorado River—

Mr. DINGELL. You are planning to engage in the construction of a water storage project out there?

Mr. FISCHER. I believe our statutory function is more succinctly described as concerning the development and indeed safeguarding that part of the Colorado River water resources, to which Colorado is equitably entitled under the 1922 Colorado River Act.

Mr. DINGELL. You have constructed a number of projects?

Mr. FISCHER. No, sir.

Mr. DINGELL. None?

Mr. FISCHER. None. Our statute was amended in 1977 to specifically permit the issuance of revenue bonds to construct projects ourselves. We are the primary force, however, in the acquisition of decrees, under Colorado law, for several—indeed, probably—the most significant upper Colorado facility built by the Bureau of Reclamation.

Mr. DINGELL. So you had the area and work with the Bureau of Reclamation?

Mr. FISCHER. And with the local conservancy districts which under the Reclamation Act of 1902, as amended, requires contracts with local agencies and conservancy districts in Colorado that can go into debt; a conservation district like ours, cannot.

Mr. DINGELL. What is your budget?

Mr. FISCHER. The budget in 1978 is, if I may, in round numbers, approximately \$400,000.

Mr. DINGELL. \$400,000 a year?

Mr. FISCHER. Yes, sir. In 1978. I do not know what it will be in 1979, of course.

Mr. DINGELL. What are the number of dams that you folks have participated in with the Federal Government in the construction on the Colorado River?

Mr. FISCHER. May I think a minute?

Mr. DINGELL. Sure.

Mr. FISCHER. I would say identifiable construction between six and a dozen.

Mr. DINGELL. Six and seven?

Mr. FISCHER. Six and a dozen, 6 and 12.

Mr. DINGELL. Now, those are major water storage projects?

Mr. FISCHER. Major water use facilities, yes. They not only include dams—for instance, the silt project just has a diversion structure on the main stem Colorado. The Green Mountain facility was

constructed by the Bureau of Reclamation as part of the Colorado Big Thompson transmountain diversion, but it is the compensating facility on the western slope for the Colorado Big Thompson as is Ruedi Reservoir, for which we hold the water rights decree, as a compensating facility on the western slope under the Conservancy District Act of Colorado for the Frying Pan Arkansas transmountain diversion.

As a water policy body, we have been largely concerned with policy matters and litigation to protect western Colorado, if you consider applications before water courts for decrees as litigation, which they technically are.

Mr. DINGELL. Now, when you engage in studies and so forth leading to the construction of dams by the Bureau of Reclamation or the Corps of Engineers—

Mr. FISCHER. Not the corps in western Colorado.

Mr. DINGELL. Pardon?

Mr. FISCHER. The corps does not construct, to my knowledge, in western Colorado; it's just the Bureau.

Mr. DINGELL. Is the cost of your studies part of the project cost? Can you assert those costs against the project?

Mr. FISCHER. Not against the project. Certainly they are assertable against the requirements of Colorado water law to be proved to the courts that one has been duly diligent toward the application of conditionally decreed water to a beneficial use—and that's where it comes in.

Mr. DINGELL. I am not quite sure what you said.

Mr. FISCHER. The construction cost of a facility, in my mind, is the physical features, et cetera. Prior to that we have the prosecution of the decrees in the State water courts. And it is those costs—the decree costs and the diligence costs. For instance, we might have expenses of core drilling, materials exploration into a facility, and we might have litigation costs in protection of the decrees for the use of water in the Colorado River Basin in Colorado, as against transmountain uses. But those costs would not be in the construction costs, as I view it.

Mr. DINGELL. They would not be in the construction costs which BLM would finance, is that right?

Mr. FISCHER. If I could, Mr. Dingell, is it perhaps the Bureau of Reclamation, not the Bureau of Land Management.

Mr. DINGELL. Yes. They would not be in them?

Mr. FISCHER. Correct.

Mr. DINGELL. Now, the costs of litigation and so forth, core drilling and things of that kind, those studies, are they chargeable against project costs?

Mr. FISCHER. Generally not.

Mr. DINGELL. They are funded from your ad valorem tax?

Mr. FISCHER. Yes. We also enter into special contracts with others, too, in which we do perform diligence work.

Mr. DINGELL. Do you have with the State game and fish any agreements as to costs in connection with studies for the preservation of habitat of different species of wildlife in the State under the State law?

Mr. FISCHER. No contracts at this point in time. We are in the process of—

Mr. DINGELL. Have you in the past?

Mr. FISCHER. No.

Mr. DINGELL. No?

Mr. FISCHER. No. We are very cooperative with the division of wildlife, but I don't believe we have ever had a contract with them.

Mr. DINGELL. You are concerned about squawfish and about the chub and the razorback sucker out there. Has a finding been made that these are endangered species?

Mr. FISCHER. Squawfish, yes; and one other. Bob, which?

Mr. McCARTY. Humpback chub.

Mr. DINGELL. Have you litigated that question?

Mr. FISCHER. No, sir, we haven't litigated it yet.

Mr. DINGELL. You haven't yet. when you say "yet," does that mean that you are aware of the fact that that is a question which is reviewable in the courts, the Secretary's finding on that particular point?

Mr. FISCHER. Well, we are aware of that, and we are also aware of the possibility of a citizen's suit under section 7 for the Secretary of Interior to equitably administer the Endangered species Act of 1973.

Mr. DINGELL. You have given thought to seeking relief under both of those sections?

Mr. FISCHER. Yes, sir. I signed a letter on May 23, 1978, to the Secretary, giving notice of the possibility of such a suit.

Mr. DINGELL. You were telling us, then, that you have not exhausted your potential for judicial review?

Mr. FISCHER. I am not sure that is what I am saying at all, Mr. Dingell.

Mr. DINGELL. You have exhausted those remedies?

Mr. FISCHER. I am not addressing the issue of the remedies. We are here in an oversight hearing and we are trying to bring to the attention of the subcommittee those areas in the Endangered Species Act which the Congress might reasonably address for better administration of the act.

Mr. DINGELL. Yes, but isn't one of those sections a question of the review of arbitrary and capricious or inequitable action by the Secretary—

Mr. FISCHER. I am not sure.

Mr. DINGELL [continuing]. In the designation of species as endangered?

Mr. FISCHER. I don't know if it is or not. I would like to defer to Mr. McCarty on that.

Mr. McCARTY. I think the 1973 act, and both of these, as far as the Yampa is concerned, the humpback chub and the Colorado River squawfish were designated prior to the 1973 act. I believe it was in 1967 or 1969. Both of them were done without any rulemaking or anything of that sort at all. And under the 1973 act, it may be that both designations were put beyond any further inquiry.

Mr. DINGELL. Wouldn't the Secretary be subject to a suit for injunction against continuing these species on the list?

Mr. McCARTY. He may very well be. But I believe that there is some basis that the 1973 act simply adopts those, adopts previous designations, and may put them beyond challenge.

Mr. DINGELL. It may not, though.

Mr. McCARTY. It may not.

Mr. DINGELL. The provisions of section 7, Mr. Chairman, I think it would be well that they be in the record. I would ask unanimous consent that they be inserted there again.

Mr. LEGGETT. We'll put section 7 in again.

[The following was received for the record:]

#### INTERAGENCY COOPERATION

SEC. 7. The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical.

Mr. DINGELL. Mr. Chairman, I observe that section 7 simply says that:

All \* \* \* agencies shall \* \* \* utilize their authorities in furtherance of the purposes of this Act by carrying programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the \* \* \* States, to be critical.

So you have at least another opportunity to enter court to deal with the question of whether or not the habitat would be affected by the dam that you are discussing, would in effect adversely affect critical habitat—do you not?

Mr. FISCHER. I will leave the interpretation, Congressman Dingell, to our attorneys, but I am as litigious as the next fellow, as you may have anticipated.

Mr. DINGELL. Sir?

Mr. FISCHER. I say I am as litigious as the next fellow, but—

Mr. DINGELL. I gather that one of your functions is to litigate, and I am not critical of that.

Mr. FISCHER. I wonder if the best interest of the country and the Colorado River Basin are served well by litigation, if there might not be a way that Congress could help the citizens of the country to avoid long and expensive litigation. Now, the Colorado River is the most litigated river in the world, as you—

Mr. DINGELL. We have overappropriated about three times, as near as I can figure. I am sure that stimulates vast amounts of litigation out there.

Mr. FISCHER. Well, certainly there have been decrees entered from all States and the river's use is six to seven times between the headwater and the Grand Canyon in Baja, Calif., as you are so well aware, but certainly overappropriation is a function of the State courts and is the subject of litigation—and we litigate a lot.

But if the Congress and this subcommittee could take a look at the expense, and the time consumption, and the fact that inflation, thanks to the activities of Washington, D.C., and their printing

presses, continue to increase the costs of these projects, we think that this would be by far better than continuing to litigate these issues.

Mr. DINGELL. Well, I am not going to engage in that particular discussion at this particular minute. But what I am trying to do is to advise that—I think we have basically a sound statute, and we have given you mechanisms to get into court to protect yourself, as any free citizen, against arbitrary and capricious acts by the Secretary. And the concern I have here is that we have apparently two options, one of which is to sanctify the termination of the existence of species, fish and wildlife, plants, on the Earth here—and the alternative we have at least some responsibility to future generations to leave a few of these species around for them. I am trying to see how you balance this dichotomy out.

Mr. FISCHER. The balance of the dichotomy, I would suggest, need not be as black and white, or as hard and fast, as some would hold it to be. We think, for instance, in Juniper Cross, that we can accommodate the generation of electrical energy and the conservation of water resources through impounding, with the endangered species. I think our concern comes down to the misuse and the prostitution of the act itself. And we think that there opportunities to do this.

Mr. DINGELL. Are you saying that the statute would be misapplied if the Secretary were to take action to preclude construction because of section 7?

Mr. FISCHER. I am saying that if the Secretary makes his findings on incomplete biological data, that that would probably be true.

Mr. DINGELL. But that action is reviewable, is it not, in the courts?

Mr. FISCHER. I would defer to counsel on that.

Mr. McCARTY. I am sorry, sir, could you repeat that? I didn't follow.

Mr. DINGELL. Well, the comment was made—and the reporter will reread the statement, if you wish—that if the Secretary acts in this matter on incomplete biological data, I said that that kind of a judgment would be reviewable in the courts, would it not?

Mr. McCARTY. It may, but I again suggest that there would appear to be a problem under the 1973 act in section 4(c)(3), which says—bearing in mind, now, that these two species, I believe, were designated 1967 or 1969—I am sorry I can't be exactly certain—but it was well before the 1973 act—

Any list in effect on the day before the date of enactment of the Act of species of fish or wildlife determined by the Secretary of the Interior pursuant to the Endangered Species Conservation Act of 1969 to be threatened with extinction, shall be republished to conform to the classification for endangered species or threatened species, as the case may be, provided for in this Act. Until such republication, any such species so listed shall be deemed an endangered species within the meaning of this Act. The republication of any species pursuant to this paragraph shall not require public hearing or comment under Section 553 of Title V of the United States Code.

And it was done in that fashion, and these two species were simply put on the list without recourse whatsoever.

Mr. DINGELL. Maybe you are saying that that ought to be changed so that we could have the list published to find out whether or not the species is in fact endangered.

Mr. McCARTY. That would be a very salutary idea.

Mr. DINGELL. Now, I gather that you are also indicating to us that the action of the Secretary in putting the species on the list should be reviewable.

Mr. FISCHER. Yes, sir.

Mr. DINGELL. Probably should be subject to at least a hearing, is that correct?

Mr. FISCHER. A hearing or hearings, plural.

Mr. DINGELL. Hearings. All right, I gather that you also are suggesting that his judgements with regard to habitat should be subject to some kind of judicial review, possibly hearing, is that what you are saying?

Mr. FISCHER. Well, I think—yes. The hearings, of course, are administrative, and the litigation is judicial, right?

Mr. DINGELL. Now, if those things were done, would that absolve your problem?

Mr. FISCHER. I think it would go a long way, but I don't think it would solve all of the problems, of course.

Mr. DINGELL. What would remain?

Mr. FISCHER. Bob?

Mr. McCARTY. What would remain under the construction of section 7 by the Supreme Court is the inhibition that one would meet, as far as an agency is concerned, if there had been a declaration of endangered to begin with, of no opportunity by that agency to bring some balance.

If I could briefly advert here to our particular situation—and it is not unusual, but we have presented it to the committee in the context of this Juniper Cross Mountain project which is before the Federal Energy Regulatory Commission under preliminary permit. Now, if we find the project to be a feasible one as a consequence of our studies—this, of course, has to embrace not only environmental studies, which involve these endangered species, but also economic and engineering, financial feasibility—but assuming that we do all that, then we have to file an application for a license to that agency.

Mr. DINGELL. You would have to do that in any event, would you not?

Mr. McCARTY. No doubt about it. But we then have to go through a hearing—anybody is permitted to intervene, the Secretary of the Interior is a frequent intervenor before that agency; it's a full judicial proceeding before an administrative law judge—and, finally, a decision by the agency itself after an environmental impact statement and all of the panoply of a court proceeding. And after one gets a decision there, it is subject to judicial review under the statute.

Now, do we have to go through all that and then have to go through some other review or be told that we can't build the thing because of the collision with section 7? That's our problem, the physical problem.



Mr. DINGELL. Section 7, though, is the only addition to the requirements that you would have because of the Endangered Species Act?

Mr. McCARTY. I am sorry, I didn't understand.

Mr. DINGELL. Section 7 is the only addition to the requirements of existing law which is imposed by the Endangered Species Act. All the other hearings and proceedings, et cetera, have been required by other law with regard to licensing of dams on navigable waters, particularly where you are going to generate power, is that right?

Mr. McCARTY. Yes; and pursuant to statutes of the Congress which we think are in effect repudiated somewhat as a consequence of what would be required here. This is particularly true, sir, if I may, in connection with the proposal by the Senate, their amendment for this review committee, putting another layer, again, on top of this whole procedure that one has to go through.

Mr. DINGELL. Your concern about the Senate proposal is that it imposes an additional burden of litigation as opposed to meeting the substantive problems that exist with regard to the Endangered Species Act, is that correct?

Mr. McCARTY. Under section 7, yes.

Mr. DINGELL. Under section 7.

Mr. McCARTY. And particularly as construed by the Supreme Court.

Mr. DINGELL. And I gather that you are indicating that a cleanup of that section would be far desirable in terms of the substance to perhaps adding additional review processes, is that right?

Mr. McCARTY. Yes; this is true.

Mr. DINGELL. I think we are beginning to understand each other a little better. And I don't gather that what you are here to assert is that it would be necessarily desirable to permit man's activities, absent the gravest of need, to wipe out species or habitat, is that correct, upon which those species might depend?

Mr. McCARTY. We are not advocating the elimination of any species. We want an opportunity to be able to live up to our own responsibilities without the flat inhibition that is contained in this statute without the room for some opportunity to balance, which is missing from it completely.

Mr. DINGELL. You say "balance"—you mean, choose whether the project would be good or the species would vanish?

Mr. McCARTY. No; I didn't mean that. I meant an agency, for example such as the Federal Energy Regulatory Commission, should be able to make a decision within its procedures, based on a record and based on testimony and based on cross-examination, whatever else may be involved, as to whether or not the project should be licensed without the flat prohibition that is contained in section 7.

Mr. DINGELL. That provision in section 7 says that the project cannot wipe out either (a) species or (b) habitat upon which its survival is critical.

Mr. McCARTY. Or modify them.

Mr. DINGELL. I take the word "modify" to mean modify adversely, but I could be in error.

Mr. LEGGETT. If the gentleman would yield?

Mr. DINGELL. I thank the gentleman, Mr. Chairman; if I get an answer to that question, I would be glad to yield the floor.

Mr. LEGGETT. Do you recall the question?

Mr. FISCHER. I don't know where we are, Mr. Chairman.

Mr. LEGGETT. Let me ask you this: Has any of this area been declared to be critical habitat?

Mr. FISCHER. No, not yet, there has been a publication in the April 24, 1978, Federal Register of a proposal for additional listing of two or more fish species, but at this point in time critical habitat has not been published. But the Colorado River Fishes Recovery Team alternately proposes habitat that runs from Dinosaur National Monument to the Continental Divide or to the town of Craig, or something like this.

Mr. LEGGETT. Are you aware also that under subsection 4(c)(2), if there is substantial evidence presented to the Secretary, he can hold a hearing on delisting.

Mr. McCARTY. What section—I am sorry.

Mr. LEGGETT. Well, I will read it.

The Secretary shall, upon the petition of an interested person under subsection 553(e) of title 5, United States Code, conduct a review of any listed or unlisted species proposed to be removed from or added to either of the lists published pursuant to paragraph (1) of this subsection, but only if he makes and publishes a finding that such person has presented substantial evidence which in his judgment warrants such a review.

So, there is a remedy to review this matter. There is no way you are going to totally uncomplicate this problem. We had the complications, as you know, under the old act, and we have complications now under this act in constructing projects.

Mr. Forsythe?

Mr. FORSYTHE. I have questions in just two areas. Your contention is that there is substantial evidence that these are not endangered species—and I talk of the two, the squawfish and the humpback; that they are found in other places and are now being found with more and more frequency?

Mr. FISCHER. Yes.

Mr. FORSYTHE. Is my recollection correct on that?

Mr. FISCHER. If I may, Mr. Forsythe—we are not at this point ready to biologically and objectively say they are not endangered. What we are saying is that we think if we had a chance to encourage the growth of the species, given that chance, we think that they are—

Mr. FORSYTHE. That was my next question.

Mr. FISCHER. I have made the facetious remark that they are found in so many places they can't be endangered. But I think that the determination should be made by somebody other than an engineer, like me.

Mr. FORSYTHE. Well, it gets to be a problem, I know; it means that you might have to get a biologist to help to provide that evidence on the question of the delisting which the chairman has just talked about.

My second question concerns their habitat which you feel may well be enhanced by your project rather than being adversely affected.

Mr. FISCHER. We can, we think, enhance the habitat.

Mr. FORSYTHE. You think you can. Now, that issue seems to me is provided for in this consultative process with the Department. However, you feel there needs to be more than that consultation process to assure you of a fair reading of your evidence that you will not adversely impact the habitat, that you may well enhance it?

Mr. FISCHER. In addition to enhancing the habitat, Mr. Forsythe, we think that enhancement of objectivity would be in order, too.

Mr. FORSYTHE. Yes; but that gets back to the basic question of whether there is objective evaluation of outside evidence during the consultation process. This Tellico situation which has so much emotional impact behind it on both sides of the issue, I think, there were a lot of failings on both sides. The fact that it started before the 1973 act was even passed and that there was an apparent total unwillingness of the agency, the TVA, to pay any attention to the requirements of Endangered Species Act complicated the situation. TVA did everything they could including going before the Supreme Court to get the project done, including going on 24-hour construction schedules to try and complete the project before the Court could stop them. That kind of an approach is wrong.

So I really don't think that Tellico is a situation to which we ought to be looking for an idea of the total problems that are facing this act. You have, maybe not as wholeheartedly as some other witnesses, embraced the idea that we should have an Endangered Species Act as a nation concerned for endangered species.

Mr. FISCHER. We concur in that.

Mr. FORSYTHE. We should not be in the business of wiping out species. We are trying to find a way through this so that we can protect the thrust of this act and the protection it provides in a way that this Nation will still support. Obviously our problem right now is that there are a lot of Members of this Congress who at this hour probably would like to scuttle the act, period. Well, that, I think, would be a very unfortunate posture to come out with.

And so I, as one member of this committee and of the House, am trying to find a way through this tangle without losing more than we should lose. We must do that without taking the burden off of those agencies who do want to do projects which impact on the environment of listed species. Your project will have some impact, there is no doubt about that, because wherever man trods, he impacts. Yet we must try to balance this whole matter out, keeping in mind that we want to keep an Endangered Species Act that is efficient.

So I want to get back to those two points: That do you feel that you might develop evidence that they should be delisted; and, second, the question of whether your project would enhance those species, habitat rather than be adverse?

Mr. FISCHER. The question of enough information to request delisting I think could in part be solved by examination and study of the status of the fishes in two important canyons of the Yampa River where the Fish and Wildlife Service have not carried out what we believe to be their responsibility and investigate it to find out if the fishes are there. And they say, well, they might be there,

they are probably there—and as an engineer this is repulsive to me; I can't deal in might or probable or maybe.

On the question of impact on the environment, yes. Associated with the facilities, we think there is an opportunity to build some backwaters a la the example of the gravel pit for the construction of Interstate 70 on the main stem Colorado, where the Fish and Wildlife Service, in my opinion, has not carried out an objective investigation to determine why they are there, how they got there, are they breeding, and that sort of thing.

Mr. FORSYTHE. Maybe if we need something, we need to have the machinery so that they will look.

Mr. McCARTY. Mr. Chairman, if I may.

Mr. LEGGETT. Mr. McCarty.

Mr. McCARTY. I would hope that the committee would include the Supreme Court's opinion in its record.

Mr. LEGGETT. At some point we will include the Supreme Court's opinion, and this might be as good a place as any to include it.

Mr. McCARTY. Because its discussion of section 7 is abundant.

Mr. LEGGETT. Certainly, that is pertinent to our review.

Mr. McCARTY. It points out the omission of the language that was previously in the statute; that reveals a conscious decision by Congress to give endangered species priority over the primary missions of Federal agencies—and that was the point I was trying to make earlier.

Mr. LEGGETT. Gentlemen, your testimony has been very helpful. I would suggest that if you have got any particular suggestions for the subcommittee, that you communicate them to us in writing. I note that you did write to Mr. Culver expressing your views to that subcommittee. The opportunity is likewise available to you to do the same thing for this subcommittee.

[The information was not received at the time of printing:]

**STATEMENTS OF FRED G. SIMONTON, EXECUTIVE DIRECTOR, MID-WEST ELECTRIC CONSUMERS ASSOCIATION, INC., AND JOSEPH S. IVES, ENVIRONMENTAL COUNSEL, NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION, ACCOMPANIED BY EDWARD WEINBERG, ESQ., COUNSEL**

Mr. LEGGETT. Our last witness today is Mr. Fred Simonton of the Mid-West Electric Consumers Association, accompanied by Mr. Edward Weinberg of the Basin Electric Power Co.

Mr. SIMONTON. Thank you, Mr. Chairman. I am also accompanied by Mr. Joe Ives, who is the environmental counsel of the National Rural Electric Cooperative Association with headquarters here in Washington.

Mr. Chairman, our association is a service organization and a policy organization for the rural electric cooperatives and municipal electric systems, public utility districts in nine States in the Missouri River basin.

Mr. LEGGETT. Your statement will be included in the record, as though you read it.

Mr. SIMONTON. Very good.

Mr. LEGGETT. Likewise the statement of Mr. Ives.

[The following were received for the record:]

STATEMENT OF FRED G. SIMONTON, EXECUTIVE DIRECTOR, MIDWEST ELECTRIC CONSUMERS ASSOCIATION, INC.

Mr. Chairman, members of the Committee. My name is Fred Simonton. I am the Executive director of Mid-West Electric Consumers Association, Inc., with headquarters at Evergreen, Colorado. We are a regional service and policy organization of the rural electric cooperatives, and publicly-owned electric systems located in the nine states comprising the Missouri Basin: Colorado, Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. Mid-West was organized in 1958, and is composed of approximately 250 systems, which serve almost two million consumers. It was formed to obtain an adequate supply of low-cost and dependable electric power for these groups, and to secure the best possible management of the water resources of the arid and semiarid regions where our members live, work and play.

I am submitting this statement concerning reauthorization of the Endangered Species Act on behalf of the membership of Mid-West Electric Consumers Association to express our deep concern over the present Endangered Species Act and how the Act is being administered. Mid-West Electric Consumers association appreciates the opportunity to testify before the Committee.

I would like to point out that the membership of Mid-West is comprised of Rural Electric Cooperatives and Municipal Electric Systems in nine mid-western states. Many of their consumers are farmers and ranchers with close ties to the land and a genuine concern for preserving and protecting the wildlife of this country. They have demonstrated their concern by support of sound environmental protection legislation and by their commitment to joint regional planning of their wholesale electric supply facilities in order to minimize degradation of the environment and maximize the use of existing resources to meet their collective needs. They have pioneered in resource protection by requiring mined land reclamation efforts in fuel supply contracts, by developing community impact alleviation programs, by planning transmission lines which cause minimal disruption to the land and its people, and by many more similar policies.

However, they are also concerned about having an adequate supply of electricity to assist them in the production of food and fiber.

Their concern deepens when our membership is informed about the manner and method in which the Endangered Species Act is being administered in some instances and how the Act is being misused by certain groups purporting to be dedicated to preserving the environment.

Our main concern with the act is its inflexibility. There is no provision that permits an organization confronted with the Endangered Species Act to balance the needs of society for a particular project against the threat or potential threat to an endangered species or its habitat. This inflexibility leads to costly delays and an unnecessary waste of economic resources, as in the case of the Tellico Dam Built by the Tennessee Valley Authority. Other projects will, we believe, unless needed flexibility is written into the law, face the same situation as the Tellico project.

We understand that the list of endangered species has grown steadily and it is possible for several thousand additional species to be added. It is our belief that the Committee should consider the enormous ramifications to the public as many beneficial projects may be deferred or abandoned with great harm to the people of the United States.

Although I have not taken a position in support of the details of any of the amendments which have been proposed to the Endangered Species Act, Mid-West Electric Consumers Association would support any amendment or proposed amendments to the existing act that would:

1. Require a sharper definition of significant endangered species and a review of the present procedure for adding additional species to the list.

2. Give the Federal agencies faced with the Endangered Species Act an opportunity to evaluate the benefits to society of a proposed project and balance that against any proposed harm to an endangered species, thus supplying the needed flexibility to the Act.

3. Provide a mechanism for implementing this policy that would reduce unnecessary, costly, and time-consuming litigation surrounding the implementation of this Act.

That mechanism should be available to applicants for federal permits and licenses as well as to federal agencies themselves. Specifically, using the Culver bill (S. 3899) as an example, whatever the makeup of the review panel, only a federal agency would be permitted to invoke it. This is fine as far as it goes, but it doesn't go far enough. Increasingly, in the field of electric supply for example, consumer and municipally owned utilities are finding it necessary to construct their own generat-

ing projects. They must obtain a myriad of federal approvals of one kind or another. It is essential that the non-federal agency seeking the approval itself have the right to invoke the mechanism for seeking a review of an adverse Endangered Species Act determination.

Where a federal construction agency is involved, that agency of course has a powerful incentive to look after its own program interests. But I question whether a federal agency which is involved only because it is called upon to approve or issue some sort of permit or right-of-way for a non-federal project can be counted upon to concern itself with the needs of the non-federal applicant where it means getting into what could be a bitter struggle over whether a non-federal project is to survive.

Attached is a copy of a resolution adopted by the Board of Directors of Mid-West Electric Consumers Association at its regular meeting April 4th 1978, supporting amendment of the Endangered Species Act. We do appreciate the opportunity to submit this testimony to the Committee and sincerely hope that the members of the Committee, environmental groups, and all others interested in protecting endangered species will, along with the Mid-West Electric Consumers Association, seek a common sense solution to the amendment of this legislation.

**RESOLUTION—THE ENDANGERED SPECIES ACT OF 1973 UNANIMOUSLY ADOPTED BY THE BOARD OF DIRECTORS, MID-WEST ELECTRIC CONSUMERS ASSOCIATION, INC.**

*April 4, 1978.*

The membership of Mid-West Electric Consumers Association, Inc., representing two million consumers and 250 electric systems in 9 states of the Missouri River Basin, is dedicated to the most efficient use of our natural resources in meeting all our public needs including electric power supply. Recognizing the potential impact of the development of energy supply to meet our consumers needs, Mid-West Electric Consumers Association is dedicated to sound environmental protection legislation and pollution control devices which protect the environment while allowing us to meet human needs.

The Endangered Species Act of 1973 established policies and procedures to give protection to plants and animals in danger of becoming extinct. However, the act is arbitrary in its policy of not providing the opportunity to balance society's need for a particular facility or project being considered against the value of the endangered species or habitat of an endangered species that may be disrupted: Now, therefore, be it:

*Resolved*, That the Mid-West Electric Consumers Association supports amendments of the Endangered Species Act of 1973 that would allow federal agencies to balance the value of the endangered species or its habitat against society's social and economic need for the project under consideration.

**STATEMENT OF JOSEPH S. IVES, ENVIRONMENTAL COUNSEL, THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION**

Gentlemen, my name is Joseph S. Ives. I am the Environmental Counsel for the National Rural Electric Cooperative Association (NRECA). NRECA is the national organization which represents nearly 1000 REA-financed, nonprofit cooperative electric systems which deliver power to approximately 25 million people in 2,600 out of 3,100 countries in the United States. These consumer-owned electric systems serve nearly 75 percent of the total area of the United States which, for the most part, is sparsely populated, containing only about 10 percent of the total population. I appreciate the opportunity to express the views of NRECA.

The National Rural Electric Cooperative Association is so deeply concerned about the Endangered Species Act (ESA) of 1973 that the membership adopted a resolution to amend the Act during their 1977 annual meeting in Atlanta, Georgia and reaffirmed the resolution at their 1978 annual meeting in Las Vegas, Nevada. The resolution is quoted as follows:

**TVA TELlico DAM**

"Under recent ruling of the courts, the TVA Tellico Dam project in Tennessee has been halted due to the discovery of a small fish known as the snail darter, when then was placed on the endangered species list. The Tellico Dam Project has been completed; however, much needed hydro-power generating capacity has been denied the people in the region due to the ruling of the courts relating to this discovery.

"We urge that the Congress pass legislation to exempt the snail darter fish from impeding the filling of the Tellico Dam Reservoir for much needed hydroelectric power generation and other benefits for the people in the region.

"We further urge that the Congress amend the Endangered Species Act to exempt species or sub-species whose preservation provides little or no benefits but will prevent the vital storage of water, hydroelectric development and power plant construction."

Although this resolution specifically mentioned the halting of a multipurpose water project which is directly beneficial to many residents of the TVA service area and indirectly beneficial to nearly everyone in the United States, the membership expressed in this resolution their broad based fears that the Act as written is being used by many anti-growth and anti-development advocates to seriously damage the nation's energy and water supplies.

The cooperatively owned generating and transmission systems, who are members of NRECA, are also concerned that the implementation of the Act will impede or prevent the construction of vitally needed generating stations or add substantially to their cost. At a meeting of the Generation and Transmission (G&T) Managers Association on April 24-26, 1977, the G&T Managers recommended that the NRECA Board of Directors work with other impacted industries to amend the Endangered Species Act of 1973 so that it will be applied in a reasonable manner with some consideration to the cost of protecting a specie and the benefits of preserving the specie. They also recommended that the protection of the Act be limited to those species which are economically, aesthetically or ecologically useful or important.

While NRECA will point out several problems with the Act and suggest several changes which will make the Act more workable, the major impact of this legislation is the restriction placed on substantial areas of public lands located principally in the states served by rural electric cooperatives. While the land area restricted for development and public use by the ESA may not be large, the addition of this land area to other land areas which are restricted for use by the Wilderness Act, the Coastal Zone Management Act, the Resource Conservation and Recovery Act, the Historic Preservation Act, the Wild and Scenic River Act, the Clean Air Act, and other federal laws, will directly or indirectly restrict a very large land area for public use and development. As the supply of the land for public use and development further decrease, due to new legislation such as the Natural Diversity Act and the Non-Game Fish and Wildlife Act, the demand for the remaining land will increase and its cost will be steadily inflated.

Industries which lease or rent federal land such as agriculture, mining, petroleum, forest products and electric utilities will probably pay higher costs and these costs will be passed on to consumers in every product sold by these industries in the marketplace. NRECA recommends that the inflationary effect of restricting the use large land areas by this total body of indirect land use legislation should be thoroughly studied and respectfully suggests that Congress authorize such a study in an amendment to the ESA.

The fear of harassment by no-growth advocates has been reinforced by the tremendous number of petitions to list plants and animals as endangered or threatened species since the Act was passed. In 1973, only 109 American species were listed as threatened or endangered, but by 1976 over 24,000 plants and animals were suggested for listing in the endangered or threatened categories. Although many of these species have no proven economic, aesthetic, or ecological importance, the fact that a species of this type has been listed or suggested for listing may delay or halt projects which are beneficial to the nation in general or large groups of citizens in particular. In the case of power plant and dam construction, these delays can and do impose a substantial economic loss directly on consumers and indirectly on the nation.

Of particular concern is the rapidity with which additional species have been added to these lists, the criteria used to classify specimens as distinct species, and the relative unproven importance of many species. Recently, over 50 additions have been made to the list and these additions include plants, butterflies, crustaceans and snails. By classifying species such as these on the basis of insignificant variations, it would probably be possible to find a "rare species" in almost any river, estuary or tract of land in the United States. For example, we are enclosing for your information a chart of the Family Spionidae, a worm found in the San Francisco Bay estuary. The family chart shows nine species: the Pseudopolydora, Boccardia, Polydora, Streblospio, Prionospio, Spiophanes, Pygospio, Dispio, and Scolelepis. The principal, if not only differences between the Pseudopolydora and the Boccardia, are (1) whether the apical tooth closely or not closely overlaps the main fang, and (2) whether the gills are located posteriorly or anteriorly.

However, using one of these "rare species"; and the inflexible requirements of the Endangered Species Act, a single disgruntled person can delay projects which are necessary in the public interest and, as in the case of the TVA Tellico Dam, there is

no mechanism within the law to resolve this conflict. In our opinion, the fact that a dispute of this type requires an Act of Congress to resolve indicates that the legislation is deficient and requires amendment.

Many have suggested that the Act does not require amendment as administrative procedures can be used to resolve most conflicts. This may be the case if there is more than one habitat for a species, but there are many insignificant sub-species which have adapted to a specific river or area such that their habitat becomes unique. In this case, only an Act of Congress can resolve this conflict as the law and now on the books allows no exception where a project, no matter how important to many people, jeopardizes the existence of that species. While this may not be much of a burden now as there are only a few species listed, over 24,000 have been proposed for listing of which 2,000 are currently being considered. If conflicts develop in proportion to the number of species listed, an already overburdened Congress will be called on more and more often to legislate on conflicts which should be settled at the administrative level.

NRECA does not recommend that broad exemptions be granted in any amendment to any major category or to any specific categories of construction projects. However, we do recommend that the Act be amended in such a fashion that listings under the Act are restricted to species which are ecologically, economically and aesthetically useful or important. We also recommend that Congress establish criteria or procedures in the amendment for classifying species on the basis of significant variations and characteristics so that insignificant varieties of fish, such as the snail darter, will not have the same degree of protection as the American bald eagle. We further recommend that the Congress establish some mechanism for balancing the marginal costs and the marginal benefits of preserving a species in the event that a conflict arises between the use of a critical habitat by an endangered species and the need for modifying the habitat by construction projects which are in the public interest.

In conclusion, NRECA respectfully suggests that the Endangered Species Act of 1973 be amended as soon as possible so that some flexibility is incorporated into the Act and a mechanism is provided so that an administrative decision, rather than an act of Congress can resolve conflicts which may develop.

We thank you very much for permitting us to express our opinion on this important Act.

Enclosure.



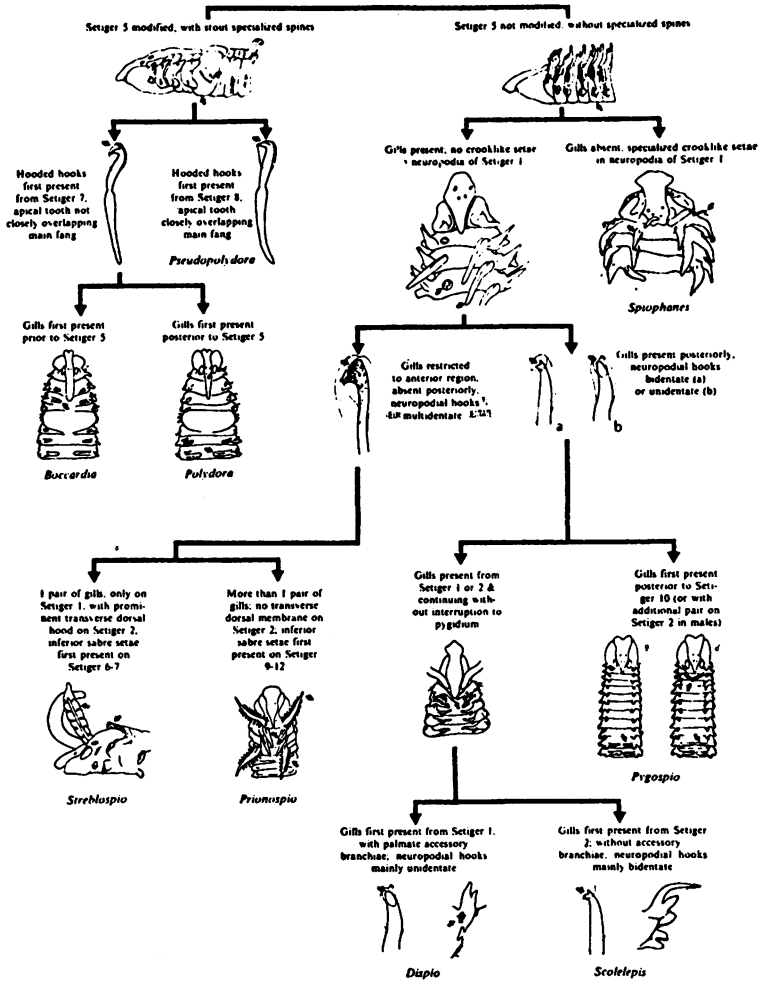


Figure 1. Pictorial key to the spionid genera of San Francisco Bay estuary system.

Mr. SIMONTON. I think that we have three points that we would like to make in regard to the Endangered Species Act. One is to require a sharper definition of significant endangered species and a review of the present procedure for adding additional species to the list. Second, to give the Federal agencies faced with the Endangered Species Act an opportunity to evaluate the benefits to society of a proposed project and balance that against any proposed harm to an endangered species, thus supplying some flexibility in the act. And, third, provide a mechanism for implementing this policy that would reduce unnecessary, costly, and time-consuming litigation surrounding the implementation of the act.

At this point, I would like to turn to our counsel, because we did discuss this this morning, as to the mechanism that should be available to applicants for the Federal licenses.

And may I correct one typographical error—I know it is Senate bill 2829, the Culver bill—and not 30—as we have in the statement.

Mr. LEGGETT. The record will so show.

Mr. WEINBERG. Mr. Chairman, we have been looking at the Culver bill and Mr. Simonton's organization has not taken any particular stand on the details of the bill. There is, however, one matter in connection with that approach that does seem to us to be a matter that needs examination in any consideration of the Culver bill. And that is the triggering of the review panel.

As the bill now stands, the review panel can be invoked only by a Federal agency.

I think in drafting the Culver bill probably there was uppermost in the minds of the draftsmen the fact that most of these dramatic clashes that have occurred involve Federal agencies that are themselves either construction agencies or direct project agencies: the Corps of Engineers, which was involved in the Indiana——case; TVA, of course, in the Tellico case; and so on.

But there is another category of entities that will, over time, become more and more involved in this same problem. And that is organizations like the members of Mid-West who are consumer-owned or municipally owned electric utilities, like the Colorado River Water District which just appeared here, which themselves find it necessary to undertake a projects which require some forms of Federal consent, authorization, financing, or approval. In that case, we suggest that whatever the mechanism that is provided, that mechanism ought to be invokable by the agency with the direct interest. And then the review panel will have before it the benefit of a true adversarial examination, which is what the Culver bill tries to set up and which is at the heart of any administrative proceeding or a judicial proceeding that Mr. Dingell refers to.

If a private entity is denied a Federal permit of one kind or another on the ground that there is an adverse effect—on the ground that there will be a violation of section 7 of the Endangered Species Act—and if there is to be a review mechanism provided, then we believe that the proper party to invoke the review mechanism is the party that claims to be injured by the denial of the permit on that ground, and not the Federal agency itself, which may have other interests to attend and which may be inclined to view the problems of an applicant with somewhat less concern

than it might view the situation if its own programs were involved. That's the point that was made in Mr. Simonton's statement.

As I understand it, there has not been a bill introduced in the House that is counterpart of the Culver bill.

Mr. LEGGETT. The Culver bill, at this point, remains in the Senate.

Mr. WEINBERG. And I am not aware of any bills that have actually been introduced in the House, unless they have been introduced in the last day or so.

Mr. LEGGETT. I don't believe the particular procedure that has been suggested by Mr. Culver has received a lot of support in the House at this point.

Mr. WEINBERG. I would suspect that, with the Tellico case, there are going to be some bills introduced—I would suppose that is going to happen—somewhere in the House.

Mr. LEGGETT. There are a lot of bills introduced to reverse the effect of the Tellico court decision.

Mr. WEINBERG. I think that is much too narrow a focus. The problem in the Endangered Species Act. The Supreme Court has said that in the act Congress has made the value judgment, if an endangered species is, in the words of section 7, jeopardized, or the critical habitat is jeopardized—once that factual issue is determined, the matter is over. Congress has made the judgment that in that case the endangered species is to be preferred over the activity, whatever it is.

Mr. LEGGETT. Of course, in your statement, what you indicate is that we should interpret the law so that only those species that are ecologically, economically, or otherwise significant should be listed.

Mr. WEINBERG. Well, I think the Supreme Court has foreclosed that as to the existing law. I think that it is going to take an amendment to the act to arrive at that. And if I read the Culver bill correctly, it takes that approach. That is to provide for an administrative weighing of the value of the endangered species on the one hand and the importance and value of the activity which impacts it on the other. To some degree, Congress did in the present law make a value judgment that some endangered species are going to have to suffer the consequence—and those are the insects determined by the Secretary to constitute a pest. So to that extent, endangered or not, their destruction is not inhibited by the present Endangered Species Act.

I think that there will be attention focused upon whether there should be some mechanism to weigh the relative benefits, on the one hand, and damages—to strike some kind of a balance. Balance-striking is not unusual in our society, it has to be done all the time. I notice, in reading the Supreme Court opinion, that the Chief Justice invoked a quotation in which the judge said that he was not God. But somebody has to play God—Congress played God when it passed the Endangered Species Act. And that has introduced certain inflexibilities, because only God in the form of Congress can now make a change.

Mr. LEGGETT. Will the projects, which your association is interested in constructing, provide power for rural America.

Mr. WEINBERG. Yes, indeed.

Mr. LEGGETT. Are there any that are currently stopped cold by section 7?

Mr. WEINBERG. No. One group of our members has a project—this statement does not cover it, because I do not think it is proper to argue the merits or demerits of a particular project in the overall context of the act.

Mr. LEGGETT. What we are trying to figure out is whether or not the Tellico project has been distorted beyond proportion and is an isolated situation. Obviously, we don't want to wipe out whole species. There are situations where perhaps critical national functions will adversely impact on a particular species.

Of course, the Congress is prepared perhaps to take up those situations by legislation.

Mr. WEINBERG. Unfortunately, in some of these situations, you don't have a dramatic one-shot action on either side. For example, take the power supply situation. We are told, and we certainly don't deny it—we believe it—that we must conserve energy; we are told, and we believe it, that we must switch to coal to generate electric energy—not only do we believe it, we know it; we are not permitted to put in an oil plant or a gas-burning electric plant anymore. Some of the organizations that I represent, I am an attorney in Washington, D.C., in resource law, and I have as a client, Basin Electric Co-op, in a particular matter that involves a project out in the west. Take the case of Basin and other similar organizations in the area of western Minnesota, Iowa, North Dakota, South Dakota, Nebraska, northern Colorado, Wyoming, and eastern Montana. There are several million power consumers there, and their principal power suppliers are Basin Electric, Tri-State G. & T., and other municipally owned and publicly owned systems. Now, they can no longer obtain hydroelectric power to meet their load growth from the Federal Government's hydro plants, because those plants have reached their capacity and no new ones are being built. This area, which is, among other things, a part of a bread basket of the United States, is utterly dependent upon agriculture, and the farmers are utterly dependent upon a power supply. And they are having to build thermal electric generating plants. Thermal electric generating plants are large undertakings, and they have to burn coal from the area. It's nonsense to talk about shipping coal from West Virginia to Wyoming.

Mr. LEGGETT. How do your coal plants come into conflict with endangered species?

Mr. WEINBERG. A coal plant requires a supply of water for cooling. Because of the regulations and requirements of the Clean Waters Act, what is called flow-through cooling is prohibited—it warms the waters. If you can take water out of the stream, run it through the plant, put it back in, you will not decrease the water supply to any considerable degree, but you will increase the temperature of the water. So that, more and more, utilities that are constructing large-scale steam plants are required to go to cooling towers, such as the one that collapsed the other day—but that's another story.

And in order to avoid any question of pollution, the water that is used cannot get back into the stream. Well, the contention can arise that the depletion of the stream may far downstream, have

an adverse impact on a species of fish or wildlife that is on the endangered species list or affects an endangered habitat.

Mr. LEGGETT. Of course, the situation that bothers me is that under the existing law, if a diversion such as you mentioned were to have an adverse impact on 1 percent on the critical habitat, the project cannot be finished.

Mr. WEINBERG. You're dead.

Unless you can provide some substitutes.

Mr. LEGGETT. What if you can't provide a substitute.

Mr. WEINBERG. And that is the crux of the problem. Now, in one of the cases, there are a myriad of factors which affect the flow of the stream at a point some 200 miles distant. In part, it is a depletion of one kind; in part, it is irrigation pumping; in part, it is activities on other tributaries which affect the flow of the stream. All of those taken together can have a cumulative effect which itself may be difficult to assess. But then when you have to start singling out each one of them to determine whether it is the make or break, you find yourself in an endless series of inquiries in which all of the emphasis is on cause and none of the emphasis is on solution.

And that is happening more and more. And it is a problem which is going to have to be dealt with.

Mr. LEGGETT. I think we understand your views. Is there anything else?

Mr. SIMONTON. We appreciate the opportunity, Mr. Chairman, to appear before your committee.

Mr. LEGGETT. If you have got any specific ideas on amendments, we would be pleased to review them.

Mr. IVES. We are now working on some now which we would be glad to submit. However, it really goes into the definitions of species and several points of that nature.

Mr. LEGGETT. Determines what species ought to be listed and shouldn't cause the subcommittee real problems. I am concerned about the 1- or 2-percent situations, real situations which have not been presented to this point to the subcommittee. We have asked the agencies if they have close cases that are beyond resolution, and what they indicate is that the answer is negative. The projects that they have can be worked out. They are satisfied that no amendment to the law is required. The previous witnesses who were here, are concerned about the potential litigation. They are obviously a thin district, organized for a purpose. It's very dicey getting into this kind of business where you don't have a very substantial base in other kinds of business activities to support litigation. But that is just one of the problems that we have.

Mr. IVES. I think the real problem with power-generating stations, Mr. Chairman, is that it takes so long to build one. The interest costs now are actually 30 percent of the capital cost of a generating station. And every single day there is a delay in a 1,000-megawatt generating station adds about \$225,000 to the capital cost. So when you go into court, forgetting about all your court costs and your escalation in these other charges, you have this real interest cost which is due to the length of construction time—and it's absolutely horrendous. so when you litigate, why, it retards the project, and it's terribly costly to consumers.

Mr. LEGGETT. Well, I mentioned on the first day of these hearings that I had a multipurpose project in my district that was authorized for \$135 million nearly 15 years ago. Since that time, we decided to modify some things and restudy. We have changed the location on the river where the project would be constructed. Now the project is up to a billion dollars. And it has moved from a multipurpose project to almost a single-purpose project.

So, delay can cause problems—and in this case the State is determined that it really doesn't want to cooperate in the building of the project.

Mr. WEINBERG. Basin is building a project right now in Wyoming, a \$1½ million kilowatt steam plant—it will cost upward of 1½ billion; it's target is to meet a power supply deadline of 1981, and if that deadline is missed by a year it is going to cost \$200 million to buy make-up power, assuming it is available—and it is highly debatable whether it will be available. We face possible brown-outs out there—that's how critical the power situation is.

Mr. FORSYTHE. Well, I have no questions, I appreciate your testimony—and, hopefully, we are going to find a way through this thing without losing the act.

Mr. LEGGETT. Thank you very much, gentleman. The meeting will stand adjourned at this point until Friday morning at 10 o'clock.

[The subcommittee recessed at 4:22 p.m.]

# ENDANGERED SPECIES OVERSIGHT

FRIDAY, JUNE 23, 1978

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON FISHERIES AND WILDLIFE  
CONSERVATION AND THE ENVIRONMENT OF THE  
COMMITTEE ON MERCHANT MARINE AND FISHERIES,  
*Washington, D.C.*

The subcommittee met pursuant to notice at 10 a.m. in room 1334, Longworth House Office Building, Hon. Robert L. Leggett (chairman of the subcommittee) presiding.

Present: Representatives Leggett, Dingell, Hubbard, Forsythe, McCloskey, and Emery.

Also present: Representative Duncan.

Mr. LEGGETT. The meeting of the subcommittee will please come to order.

This is the seventh day of hearings on the operation and administration of the Endangered Species Act.

This morning we are going to hear testimony from our colleagues, Ted Risenhoover; Mr. S. David Freeman, Chairman of the Board of the Tennessee Valley Authority; Mr. J. D. Brown of the American Public Power Association; and Dr. Wayne King of the New York Zoological Society.

This afternoon we will be hearing from Dr. Stephen R. Edwards of the Association of Systematics Collections; Mr. Bill Haselton of the National Forest Products Association; W. Samuel Tucker, Edison Electric Institute; John Robinson of the U.S. Chamber of Commerce; and Col. Richard A. Braham of the United Peregrine Society.

We are going to have a busy day. We want to give a full opportunity for the members of the subcommittee who attend to examine each of the witnesses. We want full and complete statements from all of the witnesses. We want to avoid redundancy to the maximum extent feasible.

The testimony of the TVA will be especially significant in light of the Supreme Court's decision last week affirming the decision of the Sixth Circuit Court of Appeals to enjoin the completion of the Tellico Dam and Reservoir. In its completed form this project would jeopardize the continued existence of the endangered snail darter.

Under the law the endangered snail darter is totally and completely preeminent.

The Tellico case is a symbol to many people of the inflexibility of the Endangered Species Act. Yet as of today it is the only project that has resulted in an irresolvable conflict with an endangered or threatened species.

It has been alleged that TVA partly precipitated this conflict by refusing to properly consult with the Fish and Wildlife Service and that they exacerbated the legal situation by embarking on an accelerated construction schedule after the discovery of the fish.

It has also been alleged that TVA engaged in a form of land speculation in the Tellico project by condemning more land than was necessary.

The subcommittee will want to hear TVA's response to all of these allegations, proof of which has not been made at this point.

We will also want to know what plans TVA has for the project are in light of the Supreme Court's opinion, assuming first that Congress would modify the law, and second, assuming that Congress would not modify the law.

Proponents of the project have argued that 6,000 jobs are at stake. Opponents claim that greater economic benefits are available through alternative development schemes. The latter allegation, however, has not been supported by any cost-benefit analysis.

And what we want to get in the testimony today from TVA are the best estimates that are available, not of what cost-benefits were back in the early seventies and sixties when this project was conceived, but what the cost-benefits are today with respect to completing the project, whether it should be completed or whether it should be put to alternative uses.

We will want to know what efforts are being made today to evaluate the economic importance of the project and alternatives to it.

The central question we have attempted to answer in these hearings is whether the Tellico case is bizarre and different or whether it is a barometer of conflicts which will occur in the future as we hope to expand the endangered species list and critical habitats for various and sundry species of plants and animals all over the country.

We now have as our first witness our distinguished colleague, Mr. Ted Risenhoover of Oklahoma.

Ted, you can go ahead and make whatever statement you care to make at this point.

#### STATEMENT OF HON. TED RISENHOOVER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OKLAHOMA

Mr. RISENHOOVER. Thank you very much, Mr. Chairman.

I appreciate the opportunity to testify this morning on the Endangered Species Act of 1973.

This legislation has received a great deal of criticism during the past few days because of the snail darter fish decision of the U.S. Supreme Court.

I am telling my constituents these things.

First, that I was not a Member of the 93d Congress which passed the original bill.

Second, that the U.S. Supreme Court's decision may have been good interpretation of existing law, but blocking a multimillion dollar dam was a waste of taxpayer's money and poor public policy.

Third, that the country is just lucky the original legislation specifically forbids the listing of insects as endangered species.



I fear that there are people in the bureaucracy and in the country who would move to protect even the pests that "would present an overwhelming and overriding risk to man" in the words of the law.

The act is weak, in my view, in that it delegates great responsibility to the Secretaries of Commerce and Interior to determine which of our fish, wildlife, and plants are endangered. In a practical sense, we cannot expect Cabinet-level officers of this country to decide on each and every species.

In my dealings with the bureaucracy, I have found that most secretarial decisions are made by Government employees who remain anonymous and who are beyond the reach of the electorate.

Frankly, despite the order by our President for the Secretaries to read all rules and regulations, I doubt if they could possibly assimilate and understand what they are doing to society.

Therefore, I believe we have a bureaucracy dictating to the electorate and, in my district, the electorate is plenty angry about it. To be more plain, they are damned upset.

While I wasn't a Member when Public Law 93-205 was enacted, I was aware of the passage. I felt Congress was doing something to protect the bald eagle, the grizzly bear, the whooping crane, and other well-known, beloved species. However, I don't want them protected to the extent that they become a public menace.

Now, as the list grows, we find snail darter fish, leopard darter fish, and other strange names have become factors in whether we build a dam, a highway, or other construction which would benefit the public.

I feel strongly that we should protect endangered fish, wildlife, and plants within reason. However, I wonder if the people who are deciding which are endangered are looking beyond the immediate biological evidence.

It would be good, responsive representative Government if this committee would form a special ad hoc committee to review the entire list of names that have been added to that long list.

Most strongly, I would support legislation which would require the Congress of the United States to ratify that list and, when a new species is proposed for addition, that Congress be required to pass legislation to protect the species by adding it to the list. That would serve several purposes.

First, it would place clear responsibility on the backs of elected representatives. If a mistake were made, the voters could then get their hands on the official who did it.

Second, it would publicize the endangered species that are on the list. I never heard of the snail darter fish until it started endangering a dam.

Third, it would allow the committees to hear from economists, engineers, and other interested and affected parties besides biologists. The impact of these decisions certainly should be weighed throughout the economy and the society as well as the natural, outdoor environment.

Last, but not least, how do you get an endangered species off the list?

I know that rules and regulations are published first as proposals. However, I have experienced that proposed regulations are

seldom changed and the views of interested parties generally are disregarded. I have personally protested proposed rules and regulations, however none under this act, and have yet to see any change made.

In a sense, the faceless bureaucrat who made the proposal has made a determination. That determination seems chiseled in stone.

The people of the Second Congressional District of Oklahoma are angry about this attitude of Government. Frankly, I think Congress has delegated too much responsibility and has given away the people's right to seek redress.

This Government of the people and for the people is becoming less and less by the people. The rights of the governed are perishing from the Earth and the most endangered species may be the independent-minded American.

While I have seen abuses of the environment which I regret and oppose, I have seen many more cases where modern man has improved the Earth's environment.

My friends in Oklahoma claim there are more quail, more doves, and more deer now than in our State's history. Wildlife eats better from the grain that falls from the harvest than they ate when feeding on weed seeds, they tell me. That's not scientific fact, but I am not a scientist. It is simply the view of old timers who know and love the land, water and wildlife.

When experts oppose the common man, my choice generally falls on the side of the latter. I think, at least, the citizen deserves a fair shake at being heard. If we have a hearing in Congress and all sides can make known their views, then we can act responsibly. Let history decide if we act responsibly.

In my view, I would rather see nature lose a species than for our people to lose their rights to decide their own destiny. I believe, simply, in democracy.

Mr. Chairman, I have not drafted specific amendment language to achieve the changes which I believe are necessary.

I would not object if the Secretaries of Commerce and Interior were given the power to temporarily place certain species under the protection of this act until Congress can make the permanent determination.

I believe the Congress should be required to act affirmatively before each species is granted the permanent protection of this act. I also am a practical person. I would, as a last-ditch compromise, apply the well-known one-House veto formulas to the designations.

My feeling is strong. Congress has delegated too much authority to rulers and regulators.

It is time that we read the Constitution and take back the powers to legislate.

Mr. LEGGETT. Thank you very much. Your statement leaves no doubt where you stand.

We have had many people come before the subcommittee expressing very strong sentiments to the contrary. That they think that all species are deified to a degree and that man really has no right under natural law to obliterate any species for any purpose.

What you are suggesting is perhaps moderation.

We do have a procedure under the act, as enacted in 1973 when you were not here, for delisting. I am not aware any delisting has occurred.

If substantial evidence is presented to the Secretary and he deems it is adequate, he can hold hearings on whether to delist a specie.

Our problem does not necessarily appear to be the listing of the species, but the designation of the critical habitat, which has caused the problem and caused the conflict under section 7 of the act, which has aborted the Tellico project as of this point, and which threatens the completion of the Lafayette Lake in your State. Is that near your congressional district?

Mr. RISENHOOVER. Just south of my congressional district, in the Third District that was formerly Speaker Albert's. Wes Watkins is now the Congressman from that district.

Mr. LEGGETT. Those are very distinguished Congressmen, no doubt about that.

Mr. RISENHOOVER. They are very angry, also.

Mr. LEGGETT. Anyway, the law that you have indicated is somewhat intemperate will be up for renewal. And we are soon going to the Rules Committee requesting an open rule. We are asking for a 3-year extension of the bill. The subcommittee may recommend amendments and undoubtedly will have some. I would hope we don't have 900 amendments recommended by Members of the House of Representatives.

I would suspect that the hearing will be scheduled on the legislation perhaps sometime in July. And of course if the legislation is not extended, it will expire at the end of the current fiscal year on September 30.

So that is where we are.

I don't want to get into a debate with you with respect to the merits of endangered species. There are lots of them that we have protected that are clearly beneficial to most people who observe the species, and everybody would support taking reasonable action to protect them.

The big problem, I think, is not so much what happens when a project comes into confrontation with a species which is endangered, but what happens when a project comes into confrontation with a species which may only have its habitat extended by a few percent.

Under existing law, if those cannot be cured by negotiation, of course whatever projects of man are contemplated which require the consent of the Federal Government in fact are abated.

The question might come up as to the extent to which we might want to impose sanctions on the States and counties to protect endangered species if we required this very high standard of Federal officials to protect species.

That is something upon which the subcommittee has not formulated a decision. But we will consider it.

Mr. Forsythe.

Mr. FORSYTHE. Thank you, Mr. Chairman. I have no questions.

Mr. LEGGETT. Mr. Emery.

Mr. EMERY. No questions.

Mr. LEGGETT. Mr. Hubbard.

Mr. HUBBARD. No questions.

Mr. RISENHOOVER. Mr. Chairman, if I might clarify briefly my opinion about this whole thing.

I am not completely unconcerned about the environment. I serve on the Interior Committee. We do the same thing with wilderness areas and parks that you folks have done here with the Endangered Species Act.

Mr. LEGGETT. You do more with wilderness than we do.

Mr. RISENHOOVER. We do the same thing with that that you do with the legislation that concerns endangered species.

Mr. LEGGETT. Yes.

Mr. RISENHOOVER. I really have become convinced, and I know that this committee had very good intentions, that there was legislation needed at the time this Endangered Species Act was passed in 1973. We need parks and recreation areas. We need wilderness areas that need to be preserved.

But I have seen this legislation, everything from the Endangered Species to NEPA, used in direct conflict of interest as far as the people are concerned, by groups which call themselves environmentalists. I see people placed on a list called the dirty dozen, including myself, who are very much concerned about the environment, and who have voted for and worked for legislation that would protect and enhance the environment.

But this whole thing has been used by a bunch of very smart attorneys downtown who don't get outside the confines of Washington more than half-a-dozen times during their lifetime to really see what is going on out in the rest of the country.

These things are being used by individuals who want to maintain the status quo, who have attained a privileged position in our society, who want no further growth, and who want no better situation than the situation that they are in.

The people across this country need electricity a lot worse than they need snail darters. I would venture to say, I know in my congressional district 99 percent of the people who live there would just as soon see no endangered species act as to see the act enforced as it has been in the last year or two.

Mr. LEGGETT. I think that the opinion you express is not yours alone, and it is certainly not only the opinion of a dozen. Certainly, the way Members are gaged on their environmental index, they are all made aware by many organizations. The gaging takes into consideration a very large number of issues that many times only have a vague resemblance to environmental considerations, in my view. Of course there are a lot of folks that would argue about that.

Thank you. We certainly appreciate your views. Those are important views that have to be heard by this subcommittee, and they will be heard on the floor.

Mr. RISENHOOVER. Thank you very much.

Mr. LEGGETT. We will have to suspend and go over and vote. As soon as I return, we will resume with our next witness.

[Whereupon a short recess was taken.]

Mr. LEGGETT. The subcommittee will come to order.

At this time we will hear from Mr. Bill Haselton, president of the St. Regis Paper Co.

**STATEMENT OF WILLIAM HASELTON, PRESIDENT, ST. REGIS PAPER CO. AND SECOND VICE PRESIDENT OF THE NATIONAL FOREST PRODUCTS ASSOCIATION, ACCOMPANIED BY JOSEPH McGRATH, VICE PRESIDENT FOR GOVERNMENT AFFAIRS, NATIONAL FOREST PRODUCTS ASSOCIATION; GENE BERGHOFFEN, DIRECTOR OF RESOURCE PROGRAMS, NFPA; ROBERT CARLTON, WILDLIFE BIOLOGIST, NFPA**

Mr. HASELTON. Thank you, Mr. Chairman. I have with me today Mr. Joseph McGrath, vice president for Government affairs, National Forest Products Association; Gene Berghoffen, director of resource programs for the NFPA; and Bob Carlton, wildlife biologist for the NFPA.

I do have a prepared statement.

Mr. LEGGETT. That statement will be included in the record as though you read it.

[The statement follows:]

**STATEMENT OF WILLIAM HASELTON, REPRESENTING THE FOREST INDUSTRY ENVIRONMENTAL COUNCIL**

Mr. Chairman and members of the committee; I am William Haselton, President of St. Regis Paper Company. I am also Vice Chairman of the Joint Environmental Council of the American Paper Institute and National Forest Products Association. In addition, I also serve as Second Vice President of the National Forest Products Association. The organizations I represent include timber growers, pulp and paper producers, and manufacturers and wholesalers of wood products throughout the nation.

The forest industry is concerned with timber management on all commercial forest lands in the United States, whether these are owned by the federal government, state governments, or industrial and non-industrial private owners. We support programs, on all ownerships, which lead to constructive and productive management of the nation's forest lands and which protect environmental values.

The forest industry supports the basic goal of preserving our native flora and fauna as set forth in the Endangered Species Act of 1973. However, we suggest a number of changes to foster better understanding, acceptance, and implementation of the Act.

Almost no one is opposed to taking necessary and reasonable action to insure protection of our native flora and fauna. A rigid and absolutist interpretation of the Act has created conflicts, however, with other uses of our natural resources. On areas inhabited by endangered or threatened species, this interpretation has led to a philosophy of management which has as its single goal the preservation of an endangered or threatened species.

Among our concerns with the Act are: (1) ways in which the industry can play an active role in preserving endangered species, and (2) impacts the Act does and will have on the industry's ability to provide for the people of the United States the wood products necessary for maintaining our standard of living.

One example of industry's response to the problem is the action my company undertook in donating and selling 6,000 acres of land for inclusion in the Mississippi Sand Hill Crane National Wildlife Refuge. This land increased the Refuge to four times its previous size. Our land managers have been praised for their concern with the crane over past years, without which the species might have had difficulty in surviving.

Unfortunately, there is another side to the coin. In 1975 the U.S. Fish and Wildlife Service proposed that about 13 million acres in the western United States be designated as critical habitat for the grizzly bear. If timber cutting is prohibited or curtailed in those National Forest lands included within the area proposed to be designated, forest industries which depend upon these lands for their timber base will be seriously impacted. As one of many examples, the Kootenai National Forest in northwestern Montana, which would be included in the critical habitat, is a major source of timber on a long-term basis to our forest products operations at Libby, Montana. St. Regis has timber sales contracts totaling 46.9 million board feet in 1978. We have contracts for an additional 210.5 million board feet through 1983. About 70 percent of the timber supply comes from Forest Service lands. If the cut

was reduced even 10 percent, we could not operate our facilities in the area at full capacity, and the community of Libby would be adversely affected.

The forest industry supports the concept of taking reasonable measures to protect species which are threatened with extinction as a result of man's activities. Special management provisions may be needed to protect endangered and threatened species on public lands. Forest management practices can be used to encourage and promote the recovery of endangered or threatened species by creating conditions which are conducive to their increase in numbers.

Thus far, the likely impacts on private forest land as a result of implementing the Endangered Species Act are unclear. It is also difficult to quantify the impact the Act has had on the multiple-use objectives of federal land management. Nonetheless, the Endangered Species Act does present the potential for very real threats to the practice of scientific land management on both public and private lands unless a balance of needs is achieved.

As additional species of plants and animals are identified as threatened and endangered and as additional critical habitats for these species are designated, conflicts between endangered species and forest management activities will increase. Several years of experience with the Act lead us to believe that there are changes which need to be made so as to insure the Act will continue to be a realistic and strong force in preserving our native flora and fauna.

I. We recommend that Section 7 of the Act be changed in several respects:

1. There must be some balancing of priorities among the many goals set for natural resources, of which preserving endangered species is only one. In some ways the Endangered Species Act works to undermine the concept of wise resource management in multiple use lands. The language of Section 7 should be amended to allow federal agencies to pursue multiple-use objectives while still implementing reasonable measures to avoid significant, direct, adverse effects of their actions on the conservation of endangered or threatened species or on their critical habitat.

2. Recognition should be given to national goals other than preservation of endangered species by those agencies whose principal charge is not wildlife. Federal land managing agencies must be allowed to carry out their responsibilities for managing the natural resource lands according to the concept of multiple-use management, working to achieve the best possible balance between all uses of the public lands. This concept was most recently supported by Congress in the National Forest Management Act of 1976 and the Federal Land Policy and Management Act of 1976. The language of the Endangered Species Act, most particularly Section 7, appears to preclude this possibility. The Act makes it impossible to achieve other desirable and perhaps more urgent national goals if these goals require actions which might impact an endangered or threatened species.

3. Only those parts of the habitat truly critical to a species' continued existence should be designated as critical. The designated area should consist of those specific sites within the geographical range of the species on which are found those physical or biological features (a) essential to the continued existence of the species, and (b) whose rareness deserves special management considerations or protection. Except in very unusual circumstances, the area should not include the entire geographic range occupied by the species. Whenever possible, critical habitat for a species determined to be threatened or endangered because of present or threatened destruction, adverse modification, or curtailment of its range should be designated at the time the species is determined to be threatened or endangered.

4. Agencies, such as the Forest Service, that have wildlife expertise should not be required to consult with the Fish and Wildlife Service as a matter of course, but consultation should be available when requested by such agencies. Federal agencies are required to insure that their actions do not jeopardize endangered or threatened species or their critical habitat. If there is a possibility that an agency action might conceivably impact a threatened or endangered species or its critical habitat, then the agency is required to consult with the Fish and Wildlife Service. In many cases, agencies have as much or more expertise available to make evaluation of an action's impact as does the Fish and Wildlife Service.

5. Modification of critical habitat should be constrained only when it has an adverse effect on perpetuation of the species for which such habitat is designated. Literally, the language of Section 7 prohibits any change in critical habitat regardless of the effect, if any, on the species for which the habitat was designated.

II. We agree strongly that malicious activities must be prohibited, but we urge that the term "take" in Section 3(14) be refined so as not to preclude normal land management practices. At present, it would be possible for a private landowner to be penalized for carrying out normal land management practices if these had an impact on a listed species. In its implementing regulations, the Fish and Wildlife

Service has given rise to this fear by defining the term "harm" to mean, among other things, significant environmental modification or degradation which has the effect of significantly disrupting essential behavior patterns of the species.

III. The term species has a biological meaning and, hence, should be defined in the Act, in Section 3(11), as a group of physically similar organisms capable of interbreeding but generally incapable of producing fertile offspring through breeding with organisms outside this group. The present extension of the definition of a species to include lower taxa is troublesome in that there is often disagreement among experts as to whether or not there are subspecies within a species. We are not against designating something less than a species over its entire range as endangered or threatened provided this allows normal management practices over the remainder of the range and provided problems which arise under Section 4(e), Similarly of Appearance Cases, are guarded against. However, species do, over time, shift the pattern of their spatial distribution. In many cases this is a normal phenomenon based on long-term climatic conditions or other situations. In some cases it may be due to man's impact on the habitat in that particular locale. In either case, it is important to remember that the entire species is not necessarily in danger of extinction since there may be viable populations in other portions of its range.

IV. The Act should be modified so as to require an environmental and economic analysis whenever a species is to be listed or critical habitat is to be designated. There is a need for full public disclosure of the data used to determine a species to be endangered or threatened and for designating critical habitat. We feel that any such proposal in which significant economic costs are involved or which involves the significant curtailment of federal programs or other economic activities should be accompanied by inflationary impact statements.

An immediate and significant impact on our industry of listing endangered species which do not qualify or designation of critical habitat which is unwarranted would be the unnecessary curtailment of timber management activities on federal lands. Approximately 30 percent of the softwood sawtimber used in the United States comes from federal lands. In many parts of the country, local communities are totally dependent upon federal timber management for their raw materials and economic stability.

The decision to dedicate certain areas to a single purpose should only be undertaken with a full knowledge of the economic benefits to be gained or foregone and the environmental effects to be expected and only after the alternatives available have been examined.

These changes will help make the Act more flexible in achieving the wide range of national goals we have set for ourselves over the years, including the preservation of threatened or endangered species.

Thank you for this opportunity to give our views on the Endangered Species Act. We offer our services in any way we can to aid efforts to refine the Act and insure its continued implementation.

Mr. HASELTON. Mr. Chairman, members of the committee, I am Bill Haselton, president of the St. Regis Paper Co. I am also vice chairman of the Joint Environmental Council of the American Paper Institute and National Forest Products Association, and in that capacity today, in addition, I serve and am testifying as second vice president of the National Forest Products Association.

The organizations I represent include timber growers, pulp and paper producers, manufacturers, converters, and wholesalers of wood products throughout the United States.

The forest industry wholeheartedly supports the basic goal of preserving our native flora and fauna as set forth in the Endangered Species Act of 1973. However, we believe present implementation of the act has led to problems which must be addressed.

Among our concerns with the act are: (1) The ways in which the industry can play an active role in preserving endangered species and (2) impacts the act does and will have on the industry's ability to provide for the people of the United States the wood products necessary for the maintenance of our standard of living.

One example of the industry's response to the problem is the action which my company, St. Regis, has undertaken in donating and selling 6,000 acres of land for inclusion in the Mississippi Sand Hill Crane National Wildlife Refuge. This land has increased the refuge to four times what it was previously.

Our land managers have been publicly praised for their concern over the past years with the crane and its preservation. I think we have contributed something to the species and aided in its survival and prospering.

Unfortunately, there is another side to this coin, and this concerns us.

Since 1975 the U.S. Fish and Wildlife Service proposed that about 13 million acres in the Western United States be designated as critical habitat for the grizzly bear.

If timber cutting is prohibited or markedly curtailed in those national forest lands included within the area proposed to be designated, forest industries which depend upon these lands for their timber base will be very seriously impacted.

As additional species of plants and animals are identified as threatened and endangered, and as additional critical habitat for these species are designated, conflicts between endangered species and forest management activities are bound to increase.

Several years of experience with the act lead us to believe that there are changes which need to be made so as to insure the act will continue to be a realistic and a strong force in preserving our native flora and fauna.

We have recommendations we would like to make.

First, we recommend section 7 of the act be changed in several respects:

There must be more balancing of priorities among the many goals set for natural resources of which certainly preserving endangered species is important, but it is only one of the goals.

The language of section 7 should be amended to allow Federal agencies to pursue multiple-use objectives while still implementing reasonable measures to avoid significant, direct and adverse effects of their actions on the conservation of endangered and threatened species, or on their critical habitat.

Only those parts of the habitat essential to a species' continued existence should be designated as critical, and this should be designated at the time the species is determined to be threatened or endangered.

Modification of critical habitat should be constrained only when it has an adverse effect on perpetuation of the species for which such habitat is designated.

Agencies such as the Forest Service that have wildlife expertise should not be required to consult with the Fish and Wildlife Service as a matter of course but consultation should be available when requested by such agencies.

A second change has to do with the definition of the word "take." We agree strongly that malicious activities must be prohibited, but we urge that the term "take" in section 3(14) be refined and modified so as not to preclude normal land management practices.



At present it would be possible for a private landowner to be penalized for carrying out normal land management practices if these had apparently any impact on a listed species.

Also, we believe the word "species" should be given its biologic definition, which is a group of physically similar organisms capable of interbreeding but generally incapable of producing fertile offspring through breeding with organisms outside of this group.

Next, we support designation of something less than a species over its entire range as endangered or threatened provided this allows normal management practices over the remainder of the range.

Finally, the act should require an environmental and economic analysis whenever a species is to be listed or critical habitat to be designated.

The decision to dedicate a certain area to a single purpose should only be undertaken with a full knowledge of the economic benefits to be gained or foregone, and the environmental effects to be expected, only after the alternatives available have been examined. These changes will help make the act more flexible in achieving the wide range of national goals that we have set for ourselves over the years, including the preservation of threatened or endangered species. The suggested changes and our reasons for them are spelled out in more detail in our prepared statement.

Mr. Chairman, we thank you for this opportunity to give our views on the Endangered Species Act, and we offer our services in any way we can to aid efforts to refine the act and insure its continued implementation.

Mr. LEGGETT. Thank you very much, Mr. Haselton. Those recommendations are helpful to the subcommittee and previously we have considered some of these ideas informally. We have examined some of the witnesses on those subjects and undoubtedly there will be further consideration along these lines when we make our final determination.

Mr. Forsythe.

Mr. FORSYTHE. Thank you, Mr. Chairman. I join you in complimenting the witness. I think there are some arguments here that are of value and that should be considered in the future.

Would it be possible for you to supply for the record information expanding particularly on this limited habitat issue? I suggest you tell us what you really mean in depth.

Mr. HASELTON. We would be very pleased to supply this information. Obviously it is a situation that has to be viewed on a case-by-case basis situation, but we can generalize to some extent if you wish.

[The following was submitted:]

NATIONAL FOREST PRODUCTS ASSOCIATION,  
FOREST INDUSTRIES BUILDING,  
Washington, D.C., July 7, 1978.

HON. EDWIN B. FORSYTHE,  
U.S. House of Representatives,  
Washington, D.C.

DEAR MR. FORSYTHE: Following the testimony of Mr. William Haselton on June 23, you indicated a desire to know how the forest industry would like to see critical habitat defined. Our proposed definition is:

"The term 'critical habitat' means—

"(A) for a threatened or endangered species—The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of Section 4 of this Act, on which are found those physical or biological features (i) essential to the continued existence of the species, and (ii) which require special management considerations or protection;

"(B) when the Secretary so determines, critical habitat for an endangered species can include areas meeting qualifications of subsection (A) of this section into which the species can be expected to expand naturally; and

"(C) except in those unusual circumstances determined by the Secretary, critical habitat should not include the entire geographical area occupied by the species."

I hope this is helpful to you.

Should you or your staff wish to have the specific language amending the Endangered Species Act as proposed in Mr. Haselton's testimony, we would be pleased to discuss it with you.

Sincerely,

ROBERT L. CARLTON, Jr.,  
*Wildlife Biologist.*

Mr. FORSYTHE. Thank you.

Mr. LEGGETT. Mr. McCloskey.

Mr. MCCLOSKEY. Mr. Chairman, no questions.

Mr. LEGGETT. Mr. Hubbard.

Mr. HUBBARD. No questions.

Mr. LEGGETT. Mr. Dingell?

Mr. DINGELL. No questions.

Mr. LEGGETT. Gentlemen, we could, of course, pursue the items you have discussed at length with you. However, we have a lot of people to hear today and the fact that you made these recommendations is helpful to the subcommittee.

Our next witness will be Mr. S. David Freeman, Chairman of the Board of Directors of the Tennessee Valley Authority.

Mr. Freeman, it is very nice to have you before the subcommittee. We have not been ignoring you during the past 7 days of hearings. We have been thinking about you quite a bit and we have been well aware of the legal status of your agency and the fact that your colleagues have not yet been appointed to your Board.

We had hoped that you might have a full board appointed by the time we asked you to testify, so that you would be in a better position to know where the majority and minority lie as far as TVA policy goes. But time waits for no agency and neither does this subcommittee. It is important that your agency appear.

**STATEMENT OF S. DAVID FREEMAN, CHAIRMAN OF THE BOARD OF DIRECTORS, TENNESSEE VALLEY AUTHORITY, ACCOMPANIED BY DR. THOMAS RIPLEY, DIRECTOR, TVA DIVISION OF FORESTRY, FISHERIES AND WILDLIFE DEVELOPMENT; AND DR. BILLY BOND, ASSISTANT DIRECTOR, TVA DIVISION OF AGRICULTURAL DEVELOPMENT**

Mr. FREEMAN. Thank you, Mr. Chairman. I am pleased to appear before this distinguished subcommittee. I appreciate your acknowledging the tenuous nature of my testimony insofar as it represents the view of the TVA Board. I am the Chairman of the Board but I am also the sole member of the Board at the moment so my views—

Mr. LEGGETT. You are a general but you have no corporals.

Mr. FREEMAN. Well, I have some lieutenants here with me this morning.

Mr. LEGGETT. Would you identify them for the record.

Mr. FREEMAN. On my left is Dr. Thomas Ripley, who is the Director of our Division of Forestry, Fisheries and Wildlife Development. He is the designated coordinator of the endangered species work for TVA. On my right I have Dr. Billy Bond, who is the Assistant Director of our Division of Agricultural Development. He is in charge of our valleywide agriculture program.

We also have been aware of these hearings, Mr. Chairman, and in an effort to try to be as helpful as we can we have prepared two documents in addition to my summary testimony, all of which I would like to submit for the record. One is a series of questions about Tellico as we gleaned them from the record. We thought it might be helpful to put these detailed questions in a question and answer form, and we have that as an attachment to my testimony.

We have meticulously gone through the chronology of coordination between TVA and the U.S. Fish and Wildlife Service, and we have broken this down into executive level coordination and staff coordination. I would like to offer that document for the record, if I may.

Mr. LEGGETT. All of those documents will be included in our record, and members will peruse them and perhaps have questions about them at the appropriate time.

[The information follows:]

Answers to Questions Raised During Hearings

House Subcommittee on Fisheries and

Wildlife Conservation and the Environment

May - June 1978

1. Q. What is TVA's reaction to the charge by GAO that its cost-benefit analysis of the Tellico project is "suspect"--that TVA's methodology was either faulty or contrived?

A. The cost-benefit analysis referred to by GAO was prepared by TVA in 1968 under the guidance of Senate Document No. 97, which was applicable at that time. TVA staff is convinced that the best methodology available at that time was used in the analysis, but recognizes that improved methodology has since become available.

2. Q. What is the monetary value of the benefits claimed by TVA? How do those benefits compare with benefits claimed by GAO? The monetary value of the primary benefits claimed by TVA was \$3.8 million annually (in 1968 dollars).

A. TVA staff estimates these annual benefits have a value of about \$7 million in 1977 dollars. The GAO did not make an estimate of benefits.

3. Q. What is the ratio of remaining cost vs. remaining benefits? Is the remaining cost-benefit ratio in the range of 7:1 as TVA claims?

A. The 7:1 ratio of remaining benefits vs. remaining costs is based on the reevaluation made by TVA in 1977 of the project as part of the President's review of all U.S. water projects. A copy of the reevaluation fact sheet is attached. It is patently in error in Part E (Alternatives) where it states there are "none."

4. Q. What percent of the rural lands taken by TVA for the project was actually being farmed? What percent of those lands was not being farmed (in soil banks, untillable, or otherwise not used for agricultural purposes)?

A. Virtually all of the rural land taken for the project was in farms. TVA staff estimates the following percentages of land categories make up the 38,000 acres purchased for the project:

|                        |           |
|------------------------|-----------|
| Harvested Cropland     | 23% ✓     |
| Pasture                | 39%       |
| Woods                  | 33%       |
| Idle and Miscellaneous | <u>5%</u> |
| Total                  | 100%      |

According to a 1964 analysis conducted by TVA, 160 acres of the 38,000 acres acquired for the project was in the Federal soil bank.

5. Q. Why has TVA neglected to prepare the cost-benefit analyses of the project alternatives that GAO proposed in its October 14, 1977, report?

A. Until recently, it has been the position of the TVA Board of Directors that the agency would not study alternatives to the current Tellico proposal unless it was specifically directed to do so by Congress, and that Congress has not so directed.

6. Q. Is TVA now working on such analyses?

A. Yes.

7. Q. What are the cost-benefit ratios of those alternatives?

A. TVA staff studies of alternatives have not progressed to the point of defining benefit-cost ratios. This information will be provided to the Committee when these studies are completed.

8. Q. Did TVA conduct "good faith" negotiations with the Department of the Interior during the consultation process?

A. TVA staff is sincere in its conviction that it negotiated in "good faith" with the Department of the Interior on all matters relating to the snail darter. TVA staff is convinced each staff has dealt with the other in complete candor, honesty, and "good faith." However, in the past the TVA staff was under instructions from the TVA Board not to explore any option that would require material alterations to the project as proposed by TVA.

9. Q. Judged only on remaining cost-benefits of the project as designed, how does Tellico compare with other dams and public works projects around the Nation?

A. Assuming that the 7:1 ratio of remaining primary benefits vs. remaining costs is correct, the Tellico project would compare favorably on an economic basis with other dam and public works projects around the country. However, this is somewhat misleading since there are few, if any, projects with as small a percentage of remaining costs as Tellico. Even an uneconomic project would show a high benefit-cost

ratio if only 1 or 2 percent of costs remained. Also, it is possible that the alternatives under study would show an even greater benefit-cost ratio.

10. Q. Can TVA justify its published recreational benefits from the reservoir?

A. The TVA staff submitted the following justification: The estimate of total reservoir visits was based on the assumption that the visits per mile of shoreline to the Tellico Reservoir would be equal to or greater than the visits per mile of shoreline to all reservoirs. After developing the base estimate of visits, the Tellico project was analyzed with respect to such factors as water surface area, geographic location, local and regional road access, nearby centers of population, nearby complementary or competing recreation areas, developable topography, water quality, and aesthetic attraction to arrive at a professional judgment on whether or not the base estimate of visits should be raised or lowered to account for these factors. In the case of the Tellico project, the base estimate was raised to reflect the consensus of staff that Tellico would be one of the most attractive lakes for outdoor recreation in the Valley. The growth of recreation use over the life of the project was projected using as a basis the growth in visits at existing TVA reservoirs. Once the estimate of visits over the life of the project was established, these visits were allocated among commercial recreation areas, public

access areas, and other public lands based on the carrying capacities of these categories of recreation areas as determined from the recreation land use plan for the project. Using guidelines contained in Supplement No. 1 to Senate Document No. 97 for evaluation of visits based on the concept of willingness to pay, visits to each of the three types of areas involved were multiplied by dollar values ranging from \$.50 to \$1.25 to arrive at the final estimate of annual project recreational benefits.

| <u>Years After<br/>Project Completion</u> | <u>Recreation<br/>Visits</u> | <u>Weighted Average<br/>Value Per Visit</u> | <u>Dollar<br/>Benefit</u> |
|---|------------------------------|---|---------------------------|
| 6   | 1,585,000                    | \$.65                                       | \$1,030,000               |
| 15 on                                     | 2,265,000                    | \$.75                                       | \$1,670,000               |

After discounting the above dollar benefits to present worth (using  $3\frac{1}{2}$  percent and 100-year service life), the capitalized recreation benefit was about \$42,000,000, which converts to an annual equivalent value of \$1,440,000.

Independent estimates of Tellico visits by Economic Research Associates in 1971 (1.5 million by 1980 and 2.1 million by 1995) substantiate the general range of recreation visits TVA projected for Tellico.

Comparable estimates of recreation benefits for completing the project without creating a lake are now being compiled as part of the study of alternatives.



11. Q. Have critics of the proposed reservoir prepared cost-benefit analyses of proposed alternatives that are more favorable than the existing project.

A. Proponents of river-based area development alternatives to the current Tellico proposal have estimated the developmental costs of these alternatives, but the TVA staff is not aware of any benefit-cost analyses that they might have made. As we have said, the first such analysis is now underway.

12. Q. Will the dam impact the critical habitat of the snail darter? If so, how?

A. The U.S. Fish and Wildlife Service has identified critical habitat for the snail darter as extending from the concrete portion of the dam upstream some 16.5 river miles to Rose Island. If the dam is closed, this stretch of river will change into a reservoir environment and, in all probability, will have a dramatic negative impact on the remaining snail darter population. The biologists believe the impact will occur because of the gradual covering of gravel shoal areas with silt. These shoals produce the snails and other food sources for the fish and are also apparently used as spawning sites.

13. Q. How well is the transplanted population of the snail darters doing?

A. Based on observations and collections made by TVA since the transplants ended in February 1976, agency biologists believe that the Hiwassee population is healthy and viable. Reproduction has been confirmed for two successive years and there is every indication that spawning occurred during the third year. Given the maximum life span of 3+ years for each individual fish, TVA biologists believe that those darters now present in the Hiwassee are entirely progeny of the original transplanted stock. However, we recognize that scientists may reasonably differ on the time required to prove that the species can survive in another river and that additional time is required to conclusively prove the point.

14. Q. How many snail darters were transplanted--and to where?

| A. <u>Transplant Site</u>   | <u>Number Transplanted</u> |
|-----------------------------|----------------------------|
| Hiwassee River Mile 35.8    | 301                        |
| Hiwassee River Mile 36.7    | 261                        |
| Hiwassee River Mile 38.0    | <u>148</u>                 |
| Subtotal                    | 770                        |
| Nolichucky River Mile 18.0* | <u>61</u>                  |
| Total                       | 771                        |

---

\*Transplants to the Nolichucky were discontinued following discovery of a population of sharphead darter (Etheostoma acuticeps) in the area, a species considered by many experts to be extinct. Since that time, investigations have failed to locate any snail darters in the Nolichucky.

15. Q. How many snail darters are in the transplanted population now?
- A. TVA biologists estimate that the population in the Hiwassee now numbers between 1,500 and 1,900 fish.
16. Q. What is TVA's view concerning the completion of the project-- should it be completed or not?
- A. An answer to that question must of necessity await a quorum on the TVA Board and the completion of the analyses of alternatives.

# # #

## Tennessee Valley Authority

## Tellico Project

Project Authorization and Planning Documentation:

Public law and date: Tennessee Valley Authority Act of 1933 - May 18, 1933  
 Environmental Impact Statement and date: Final Environmental Impact Statement filed with CEQ on February 10, 1972  
 Phase I Design Memorandum/Definite Plan Report and date: N/A

Location: The Tellico Dam site is in Loudoun County, Tennessee, near Lenoir City at mile 0.3 on the Little Tennessee River.

Project Description and Purpose: The Tellico Dam will create a reservoir extending upstream approximately 33 miles and connecting with the Fort Loudoun Reservoir by a short canal. The canal enables the navigation and power features of the project to be attained without construction of a navigation lock or powerhouse and valuable flexibility is achieved in TVA flood control operations. The project will add 126,000 acre-feet of flood storage to the TVA system and will extend navigation to an important rail and highway crossing of the Little Tennessee River. It will add an average of about 200,000,000 kWh annually to the Fort Loudoun power generation. The project will stimulate the economy of the area characterized by outmigration and under employment by providing major industrial sites with access to river transportation and by providing a water and shoreline resource with great potential for community development and recreational opportunities. The project will also provide fish and wildlife, water supply, and redevelopment benefits.

A. Economic Data

## 1. Federal and Non-Federal Financing:

| First Costs                      | <u>Construction</u> | <u>Lands and Relocations</u> | <u>Total</u>            |
|----------------------------------|---------------------|------------------------------|-------------------------|
| Federal                          |                     |                              |                         |
| Sunk Through FY 1977             | \$77,819,000        | \$26,681,000                 | \$104,500,000           |
| Cost to Complete                 | <u>11,369,000</u>   | <u>131,000</u>               | <u>11,500,000</u>       |
| Total                            | \$89,188,000        | \$26,812,000                 | \$116,000,000           |
| Non-Federal                      |                     |                              |                         |
| Sunk Through FY 1977             | -                   | -                            | -                       |
| Cost to Complete                 | -                   | -                            | -                       |
| Total                            |                     |                              | -                       |
| Total: Federal & Non-Federal     | \$89,188,000        | \$26,812,000                 | \$116,000,000           |
| Annual Operation and Maintenance |                     |                              |                         |
| Federal                          | -                   | -                            | \$205,000 <sup>1/</sup> |
| Non-Federal                      | -                   | -                            | -                       |
| Total                            | -                   | -                            | \$205,000 <sup>1/</sup> |

1/ Per FEIS

## 2. Repayment of Federal Financial Costs:

|                           | <u>Paid or to be Paid<br/>as Costs are Incurred</u> | <u>Deferred</u> | <u>Terms of<br/>Repayment</u> |
|---------------------------|---|-----------------|-------------------------------|
| First Costs               | -   | \$225,000       | Power revenues                |
| Operation and maintenance | \$3,000   | -               | Power revenues                |

## 3. Effective Composite Project Cost Sharing by Purpose if Available from Section SG (1974 Dollars).

| <u>Purpose</u> | <u>Appropriated Funds</u> | <u>Non-Appropriated Funds<sup>1/</sup></u> | <u>Total</u> |
|----------------|---------------------------|--|--------------|
| Hydropower     | 0                         | \$319,000                                  | \$319,000    |
| Other          | \$2,831,000               | 0  | \$2,831,000  |
| Total          | \$2,831,000               | \$319,000                                  | \$3,150,000  |

## 4. Benefit-Cost Ratios and Net Economic Benefits

Current Discount Rate (6-3/8%)<sup>2/</sup>

|   |             |
|---|-------------|
| Benefit-cost ratio based upon remaining primary benefits and costs: | 7:1         |
| Net remaining economic benefits (average annual):                   | \$3,232,000 |

Authorized Rate, if Applicable; Specify Rate: N/A

|   |     |
|---|-----|
| Benefit-cost ratio based upon total primary benefits and costs: | N/A |
| Net economic benefits (average annual):                         | N/A |

Discount Rate Applicable for Appropriations for Initial Construction Funding, if Applicable; Specify Rate: 3-1/4%

|   |             |
|---|-------------|
| Benefit-cost ratio based upon total primary benefits and costs: | 1.7:1       |
| Net economic benefits (average annual):                         | \$1,510,000 |

<sup>1/</sup> Revenues derived from TVA power operations  
<sup>2/</sup> 1968 Price levels

| 5. <u>Benefits and Allocated Costs:</u> | Average Annual Benefits <sup>1/</sup><br>(\$ in Ks) | %          | Average Annual Allocated Costs <sup>2/</sup> | Number of Beneficiaries        |
|---|---|------------|--|--------------------------------|
| Flood Control                           | \$505   | 7          | \$179  | 3/                             |
| Navigation                              | 400   | 5          | 114  | 4/                             |
| Power                                   | 400   | 5          | 115  | TVA power system <sup>5/</sup> |
| Recreation                              | 1440  | 19         | 505  | 1,750,000 annual visits        |
| Fish and Wildlife                       | 220   | 3          | 77   | 140,000 annual trips           |
| Water Supply                            | 70  | 1          | 20   | 20,000 people                  |
| Shoreline Development                   | 710   | 10         | 202  | 300 tracts                     |
| Redevelopment                           | 15  | -          | -  | 100 people                     |
| Enhanced Employment                     | 3650  | 49         | 1038   | 5700 people                    |
| <b>TOTAL</b>                            | <b>\$7410</b>                                       | <b>100</b> | <b>\$2250</b>                                |                                |

#### 6. Local Cooperation Requirements

Local sponsor name: None

| 7. Net Employment Impact: | NUMBER INDIVIDUALS   |          |         |          |
|---------------------------|----------------------|----------|---------|----------|
|                           | At Construction Peak | Date     | Current | Date     |
| Onsite . . . . .          | 300                  | March 77 | 300     | March 77 |
| Offsite . . . . .         | 35                   | March 77 | 35      | March 77 |
| Total . . . . .           | 335                  |          | 335     |          |

8. Have opportunity costs of foregone recreation benefits and hydrogeneration been incorporated in the most current B/c ratio calculation? If No, estimate the dollar value of foregoing benefits, using market values as a basis for calculation. Yes.

9. Are project costs within the current project authorization ceiling? N/A

10. Water use as proposed by project (irrigation: Volume of water diverted vs. volume of water consumed; municipal and industrial: average daily per capita water use). Municipal - 160 gal/per capita/per day  
Industry - 10,000 gal/per capita/per day

<sup>1/</sup> Taken from FEIS

<sup>2/</sup> TVA preliminary allocation studies

<sup>3/</sup> 23,000 structures in Chattanooga and additional flood relief along the Tennessee River, lower Ohio and Mississippi Rivers.

<sup>4/</sup> Consumers of water borne products

<sup>5/</sup> TVA serves 2,251,413 residential and 270,532 commercial and industrial and 11 Federal customers.

**B. Environmental****1. Extent of significant impacts:**

- a. Agricultural and forest land eliminated from production or potential production: 1/
- (1) Crop land type I-IV, number of acres 33,000, SCS Class I or II 17,000
  - (2) Range of grazing land type VI, number of acres 2600
  - (3) Forest type oak-hickory, number of acres 1600, productivity 85-120  
cu ft/ac/yr
  - (4) Unique crop land type -, number of acres none.
- b. Upland wildlife habitat eliminated or substantially modified: 1/
- (1) Acres 15,000, habitat type forest & open land, wildlife type white-tailed deer, dove, quail, rabbit, gray squirrel, and others.
  - (2) Local and regional importance of habitat minor.
- c. Wetland eliminated or substantially modified:
- (1) Acres minor, type Type 1 (Circular 39)
  - (2) Primary plant species oaks, sycamore, willow, maple, ash, elm  
Species of fish and wildlife affected wood duck, mallard, black duck, raccoon, mink, muskrat, sauger, crappie, trout (stocked), white bass, various sunfish, buffalo, carp, redhorse sucker, and miscellaneous darters and minnows.
- d. Fisheries resources, area and type:
- (1) Commercial type -, area affected None
  - (2) Sports type 86% cold water, 14% warm water, miles of stream affected 33.
  - (3) Local and national significance significant locally, minor nationally
- e. Water quality: (specify, without mitigation, if any)
- (1) Eutrophication in impoundments: No
  - (2) Reduced downstream flow: No
  - (3) Salinity increases: No
  - (4) Pollutant type and amount: None
  - (5) Other: None
  - (6) Compliance with state standards: Yes
- f. Inducement for flood plain development:
- (1) urban: Acres -, type N/A
  - (2) agricultural: Acres 0, type N/A

1/ The same land may be shown in more than one category (including wetlands habitat, if any).

- g. Existing and potential recreational uses: (type, magnitude)
- (1) type canoeing-rafting - 1,500 trips/yr; small game hunting - 9660 trips/yr; coldwater fishing - 31,000 trips/yr; warm water fishing - 5000 trips/yr
  - (2) projected needs specific surveys for project area not available
- h. Endangered or threatened species: (specify)
- (1) Federal list Snail Darter *Percina tanasi* (E)
  - (2) Proposed Federal Anthony's river snail *Athearnia anthonyi* (T)
  - (3) State list Blue sucker *Cycleptus elongatus* (T)
  - (4) Proposed state 0
- i. Potential induced downstream flooding: (magnitude, frequency, flooded area)
- (1) Flood magnitude None
  - (2) Flood frequency -
  - (3) Flooded acres -
- j. Cultural, historic and archeologic resources: (type, extent)
- (1) Type historic, prehistoric, and historic archaeological
  - (2) Extent 1750 period English fortification (Fort Loudoun), 1790 period U. S. garrisoned fortification (Tellico Blockhouse), 155 archaeological sites, two houses, school, cemeteries, campground.
  - (3) On Federal Register Two houses, two forts, two historic Cherokee Indian villages, and church campground
  - (4) Proposed for Fed Register One farm-outbuilding complex
  - (5) State Register None
- k. Parks, wilderness areas, wild and/or scenic rivers: (specify)
- (1) Name None
  - (2) Legally designated -
  - (3) Proposed for designation -
  - (4) Other areas having outstanding wilderness or scenic characteristics -
2. Nature and extent of enhancement, mitigation of, or compensation for any impacts stated in #1 above.

The snail darter which was listed as endangered on November 10, 1975, by the Department of the Interior, is still under study and review by TVA. A delisting request has been filed with the Department of the Interior (February 1977) and is under consideration by the Department. Seven hundred and ten darters were transplanted to the Hiwassee River in 1975. The transplant was successful so far as judged by survival, maturity, reproduction, and the transplanted fish continue to be closely observed. TVA has filed a permit request for transplanting additional snail darters to other locations (Holston River) with the Department of the Interior (February 25, 1977).



Also in the Little Tennessee River, Anthony's river snail is proposed for threatened listing (42 Fed. Reg. 2507(1977)). TVA has the listing of this species under review and consideration and expects to respond to the proposed listing by the April 12, 1977, deadline.

The archaeological significance of Old Fort Loudoun has been fully investigated in cooperation with the Tennessee Department of Conservation. TVA, the Department, and the Fort Loudoun Association have agreed to the preservation of the historic significance of the site by reconstruction of the fort on a raised landfill. Development plans include new access roads and an interpretive visitors center and museum.

The Tellico Blockhouse has been the subject of extensive archival research and archaeological investigations. Interpretive outline type restoration is presently underway. The archaeological investigations were also conducted in cooperation with the University of Tennessee.

Extensive archaeological investigations of other sites within the reservoir area have been conducted since 1967. These investigations were done in cooperation with the National Park Service and the University of Tennessee. TVA has agreed with the representatives of the Cherokee Nation for development of selected sites.

Two houses, school, slave graveyard, and an elm tree are being held for later use as elements of a regional park, recreation and historic interpretive plans which will be developed in cooperation with state agencies.

Fishing on the reservoir is expected to be over five times the present use of the stream. Access for boat fishermen and others will be improved. Wading and shorebirds should increase although overall use by migratory waterfowl may decrease. The change in ownership of shore lands from private to Federal will enhance wildlife development by providing stable and protected habitat.

C. Safety: No safety problems

D. Institutional

1. Identification of beneficiaries, including for direct beneficiaries estimated number of individuals, farms where available, and identification of all beneficiaries receiving over 5% of primary project benefits. None
2. Any involvement with international obligations. No
3. Extent of displacement of area residents. All relocations have been accomplished.
4. Status of local assurances and contractual commitments of non-Federal interests. None

5. Extent to which project beneficiaries have made investments whose return is contingent upon completion of the Federal project. N/A
6. Effect on Indians (Federal trust responsibilities, etc.) None
7. Litigation. The appropriations for the Tellico project, a Federal multi-purpose dam and reservoir project, were first made by Congress in October 1966 and construction began in March 1967. In 1973, when the project was 50 percent complete, a small 3-inch fish, later to be named the snail darter, was found in the area of the river to be impounded. When the Endangered Species Act of 1973 was enacted in December 1973 the project was over 50 percent complete and two years later, on November 10, 1976, at which time the project was about 75 percent complete, the fish was placed on the endangered species list. A suit was filed in February 1976 to halt the project based on the claim that completion of the project would jeopardize the snail darter's continued survival. Congress had appropriated funds for the Tellico project each year since 1966. The Congressional House and Senate Appropriations Committee, being fully informed of the snail darter situation and of the pending suit, included in their reports recommending appropriations specific directions that the project be completed as quickly as possible in the public interest. Consistent with this congressional action, the district court, after a full trial, concluded that it was not the intent of Congress that the project be halted in its advanced state of completion and denied an injunction. On January 31, 1977, the Court of Appeals for the Sixth Circuit reversed the district court decision and enjoined closure of the dam and completion of a canal which connects the Tellico project to TVA's Fort Loudoun Dam. Under this injunction other work incidental to completion of the project, such as road building and seeding, may be continued. Continued industrial development activities are also permitted under the injunction. The Sixth Circuit directed that the "injunction shall remain in effect until Congress, by appropriate legislation, exempts Tellico from compliance with the Act, or the snail darter has been deleted from the list of endangered species or its critical habitat materially redefined." TVA will petition the Supreme Court of the United States to review the Sixth Circuit decision. TVA has petitioned the Department of the Interior (February 1977) to delist the Little Tennessee River as critical habitat for the snail darter since experts now agree that the Little Tennessee River, with the dam structures in place, cannot sustain a viable, natural population of snail darters.

#### E. Alternatives

1. Reasonable alternatives where available. None
2. What use of project can be made in present scale or what changes are necessary to make it useful short of completion? The dam is ready for closure.

Mr. FREEMAN. Mr. Chairman, I came on the TVA Board last September and thus my knowledge of the Endangered Species Act is limited to what little experience I have had in the Tellico project and my work in the last 9 months. Indeed, having come into the whole Tellico project recently, my appearance here today, in a sense, reminds me of the posture of the young man who found himself appearing before a criminal judge on two charges. One charge was drunkenness and another was setting fire to a bed. He said: "Your Honor, I may very well have been drunk, but I swear to the Lord that bed was on fire before I got in it."

I hope you will appreciate the circumstances I find myself in as I proceed with my testimony. While I am a newcomer to the TVA Board, I am not a stranger to the benefits of multipurpose dams.

Mr. LEGGETT. What was your job before you came on the board?

Mr. FREEMAN. I was an assistant to Jim Schlesinger and the President, working on our energy policy. Before that I worked for Senator Magnuson and the Senate Commerce Committee on the Hill for a year and a half. My career includes tenure with the Federal Power Commission as assistant to the Chairman, and some work in energy research and development and energy policy. I did work for TVA before as an engineer and a lawyer.

More pertinently, I lived in Chattanooga and I saw floods on the Tennessee and I saw what a multipurpose development could do for the area. So I start off with an appreciation of those benefits. But I also understand that at some point as you go upstream on the tributaries, other forms of development may be more cost effective and more beneficial. So my attitude about Tellico is that I am sympathetic to the dam and reservoir approach but I cannot take any project on blind faith.

I think it is important that the subcommittee understand that the Tellico project is a whole lot more than just a dam. We have prepared a map that shows you in yellow the land area TVA has purchased.

Mr. LEGGETT. As I understand, that yellow area that you designate in your map is roughly 35 miles long; is that right?

Mr. FREEMAN. Roughly speaking, it includes 38,000 acres of land, 22,000 acres of which would be above the high water mark if the reservoir were closed. We have an overlay that gives you a picture of what this area would look like if the dam were closed and a lake formed. This illustrates that the project contemplated a lot of land for industry, homes, and recreation use in addition to land for the reservoir.

Mr. LEGGETT. What is the area of land that would be flooded?

Mr. FREEMAN. 16,000 acres.

Mr. LEGGETT. So you in fact took a lot of shoreline area?

Mr. FREEMAN. And beyond the shoreline, sir, for industry and other types of development.

Mr. LEGGETT. That was for multipurpose use; is that right?

Mr. FREEMAN. Some of it is contemplated to be used for industry, and, as I will explain, I think we should move ahead with that. Some of it was for wildlife protection. I think a new town was also planned there at one time.

Mr. LEGGETT. Did you acquire some for agriculture?

Mr. FREEMAN. No, sir, much of the land which was acquired was in agriculture. And as I will state in a moment, it would be very, very useful for agricultural purposes if devoted to that. This land was mostly farmland when it was purchased by TVA, and the project was designed to convert it to a reservoir, a new town, industry, and recreational development.

Mr. LEGGETT. You came on the board at what time?

Mr. FREEMAN. In September of last year.

Mr. LEGGETT. Were you committed against Tellico at the time you came to the board?

Mr. FREEMAN. No, sir, and I am not committed against Tellico today. I am trying to separate fact from fiction. Indeed, as I will state in a moment, up to date facts about the costs and the benefits are pretty hard for me to find in the TVA records and we have been searching rather meticulously. The last cost-benefit analysis was made in 1968.

Mr. LEGGETT. The estimate of benefits that you list in your questions and answers indicates in 1977 benefits are \$7 million a year. Is that accurate?

Mr. FREEMAN. I think they represent an inflated version of the cost study that was made in 1968.

Mr. LEGGETT. Without a restudy of those benefits; is that right?

Mr. FREEMAN. Yes, sir.

Mr. LEGGETT. So at this point how large a staff does TVA have?

Mr. FREEMAN. We have a large number of people, most of whom are working building six nuclear powerplants and a lot of other electric power stations. We have about 43,000 employees but most of them are construction workers and people working on our power program.

Mr. LEGGETT. How many office workers do you have?

Mr. FREEMAN. The number of people working in nonconstruction jobs is approximately 16,000.

Mr. LEGGETT. With 16,000 employees, I do not understand why you did not come before this subcommittee with a complete cost analysis on all of the alternatives that have been presented to you by the University of Tennessee.

Mr. FREEMAN. Mr. Chairman, I am sympathetic to the thrust of your question——

Mr. LEGGETT. Do you need more for your office?

Mr. FREEMAN. No, sir, we do not need more people. But if I could take a minute I will be able to explain why those studies are not complete. The policy of the TVA board, stated publicly until May 18 of this year, was that there were no alternatives. As a matter of fact, if you——

Mr. LEGGETT. I understand that, but you have been running this agency now for 6 or 8 months.

Mr. FREEMAN. No, sir, I have been running the agency since May 18, when the former chairman retired. There was a 2-to-1 majority that held there were no alternatives until May 18.

Mr. LEGGETT. All right.

Mr. FREEMAN. Indeed, we did get the study started a few weeks before May 18.

Mr. LEGGETT. Is your study in progress now?

Mr. FREEMAN. Yes, sir.

Mr. LEGGETT. When will that study be completed?

Mr. FREEMAN. We are working in coordination with the Department of Interior and it will be completed the first day it is humanly possible to do so. We have promised the Congress, this committee, and the public a report by August 10, providing such information. In my testimony today it reveals the latest numbers as we are developing them. If I may proceed, I think I will be able—

Mr. LEGGETT. The problem is that it is very difficult for this subcommittee to bring the authorizing legislation to the floor of the house until we have a full analysis of this particular project. Whether or not this project is built is not within the purview of this subcommittee. Certainly, the subject matter has been dramatically before this subcommittee now for 3 or 4 weeks.

Mr. FREEMAN. Mr. Chairman, you have a sympathetic agency and sympathetic agency head insofar as your concern about the problem of getting up-to-date numbers. We have been doing everything that is humanly possible, since there was an opportunity to do so, to get some up-to-date numbers. If I may proceed, I think maybe we will be able to give you a better feel for what we know and how this project looks to some newcomers in charge of TVA.

There is one point about the project that I think needs to be brought out. The dam itself does not contain any power-producing capacity, but the water impounded could flow through the Fort Loudoun Dam generators, producing about 200 million kilowatt-hours annually of hydropower. It would not add to TVA's capacity to meet peakloads and would substitute for only 0.2 of 1 percent of TVA's fuel requirements.

The project was originally justified on the basis of 38 percent for recreation, 19 percent for shoreline improvement, 6 percent for fish and wildlife, 11 percent for hydropower, 11 percent for navigation, 13 percent for flood control, and 2 percent for water supply.

As I have already mentioned, the latest thorough computation of costs and benefits is 10 years old.

TVA has steadfastly refused to evaluate any alternatives to the dam and reservoir approach to the project. For that reason the TVA files contain no cost and benefit figures on alternatives other than cursory evaluations as part of the environmental impact statement in 1971. Ironically, the "scenic river" approach showed a better cost-to-benefit ratio when compared to total cost than the original project. But the analysis did not cause any change in the project, which was already underway, and on the basis of the remaining cost-to-benefit ratio the existing project appeared to be a better one.

The refusal by TVA to consider alternatives goes at least as far back as 1965 when the project was first proposed to Congress. The files revealed pleas from local citizens and even the Governor of the State of Tennessee in 1971 to consider an alternative development that did not "flood" the river. But TVA continued to build the dam.

Since the Tellico project was proposed in 1965, Congress passed the Historic Preservation Act in 1966, the National Environmental Policy Act in 1969, and the Endangered Species Act in 1973, but TVA did not modify its project in any material way to reflect the values which these acts were designed to protect.

Consultations under the Endangered Species Act between TVA and the Department of the Interior began in 1975 and were frequent and intensive at the staff level. There was no personal contact at the agency head level until the May 10, 1978, meeting with Secretary Andrus. The TVA board's position in the past was that the Endangered Species Act did not apply to the Tellico project, but they were willing to consult on ways to save the snail darter without changing the project.

TVA staff therefore consulted under instructions that the dam and reservoir project was not to be materially altered. It is fair to add that TVA's refusal to acknowledge the Department of Interior's authority caused a counterreaction by the Department which refused to facilitate ideas by TVA to transplant the snail darters to other reservoirs.

We have eliminated all those constraints. TVA and the Interior Department are now working intensively together. Assistant Secretary Robert Herbst was down in the valley on Tuesday. We had a meeting of our staffs and we are now doing everything that our scientists can think of to find another habitat for the snail darter and open up the option of completing the project.

These scientists, when they got together without the constraints of the litigation, found there was no substantial disagreement among them.

Mr. Chairman, conventional wisdom would suggest that since the dam has been largely built the most economical solution would be to complete the project as planned. Everyone seems to be jumping to that conclusion. But I am not at all sure. No one has really evaluated the benefits of an alternative that recognizes the economic values of the food production that would be lost and that places some value on the unique historical sites—the ancestral home of the Cherokee Indians—and fish and wildlife that would be destroyed by the dam and reservoir as now planned.

Perhaps the Tellico project was the best possible project when it was designed decades ago. Maybe it still is. But there have been dramatic changes in land values and in the values of society since this project was planned in 1939. And we must remember that a decision to close the dam and create a lake is a decision that will last for centuries because once a reservoir is formed, the land is ruined and other values are destroyed.

It is not just the snail darter that has been discovered since the Tellico project has started. The Nation is beginning to discover that prime farmland is also an endangered species whose value has gone up appreciably. The bottom lands in the Tellico Reservoir now owned by TVA contain some of the best farmland in Tennessee. The Tellico Reservoir also contains the ancestral home of the Cherokee Indian Nation, and preserving these historical sites has been recognized as a value for contemporary society. And a new generation of Tennessee Valley residents have grown up—many of whom place a greater value on canoeing on a free-flowing stretch of river than motorboating on a lake.

I was in the Tellico area last week and I recognize that most local residents now want to see the project completed as a dam and reservoir. And the people whose land TVA took away have a strong equitable claim in saying their land should be used for the purpose

for which it was taken or returned to them. The Tellico project was paid for and is owned by all the taxpayers of the nation, and I recognize the national interest in TVA's position.

The Supreme Court's decision clarifies the law but does not begin to answer the basic question which I believe is central. How can we complete the Tellico project so as to provide the taxpaying public the most for their money?

The TVA staff began a study to answer that question several weeks ago at my direction, and the Department of the Interior has now agreed to work with us on an urgent timetable.

It might be useful to identify the major benefits and values that are potentially available from the Tellico project:

1. Jobs created by new industry on the project land,
2. Recreation,
3. Food production,
4. Hydropower,
5. Flood control,
6. Navigation,
7. Cherokee ancestral homeland, and
8. Fish and wildlife enhancement.

As far as people in the region are concerned, the primary benefit promised by the Tellico project is to create jobs in a very depressed area. And as far as I am concerned that should be TVA's No. 1 priority. Cashing in on the promises to those people is a long overdue action on TVA's part.

It is true that a lake with barge transportation could make the lakeshore industrial tracts more attractive to some industries. But 95 percent of the industrial jobs in the Tennessee Valley have been at sites with no barge transportation. There is both rail and highway access to the industrial land and some of it would not be lakefront property. It is likely that this land can be put to job-creating uses by private enterprise with or without a reservoir.

In recent weeks under my direction TVA has begun to take action to make good its promises of jobs to the people in the Tellico area. TVA has decided to locate a small facility on Tellico land above the level of any possible lake to get an industrial park started and to bring in the water and sewer lines. This facility will create about 40 jobs. We are also making some project land available for an airport, and TVA will give a high priority to working with State and local officials and the railroad in an effort to attract industry.

The job-creating potential of the Tellico project need not be delayed any longer. The land is available now for industry and TVA staff is operating under directions from me to pull out all stops to help the people in the area bring in jobs.

Recreation is another major benefit of the project. Another lake would indeed raise property values for the lakeshore land and create a place for boating and fishing. However, the stretch of river in its natural state is a source of canoeing and some of the best trout fishing in the area. The lake would be beautiful but many people doubt that it would improve the looks of that stretch of free-flowing river.

A comparative analysis of the recreation potential is underway. But just as with industrialization it is possible, indeed likely, that

recreation benefits could be achieved with or without a dam and reservoir.

TVA has been accused of land speculation at Tellico. I do not believe the charge is a fair one, but certainly the value of all the land TVA acquired has gone up tremendously. TVA paid about \$22 million for the 38,000 acres, which is approximately the cost of the dam. The land is worth at least twice that much today, which means that the land is now worth twice as much as the dam.

It may turn out to be a good thing for the taxpayer that legal constraints on completing the dam will cause us to take a harder look at how to make best use of the Government's investment in the land. The real waste of the taxpayers' money may be in flooding the land.

In addition to the land available for industry and recreation, the project contains at least 23,000 acres of farmland of which some 14,000 acres are the best remaining prime farmland in east Tennessee. This farmland can be subdivided into economic units and leased or sold to local farmers. TVA farm and fertilizer experts believe it can be made much more productive than in the past, even though it will of course take several years to achieve the maximum food potential of this rich farmland.

I would favor giving the former landowners the first option to lease this land, or repurchase it if possible.

TVA's farm experts have provided me with a preliminary analysis of the benefits this farmland could provide. The total farm sales from the reservoir land are estimated to be \$8.5 million to \$15 million per year. The TVA experts also estimate that this food production could generate farm-dependent business in the area of an additional \$21 million to \$37 million per year. Thus the total benefits of using the land for food production, rather than a lake bottom, may turn out to be some \$29 million to \$50 million per year. And this activity could create 650 to 2,900 new jobs.

These figures are to be contrasted with the value of the offpeak hydropower of some \$3 million per year, navigation benefits of \$0.5 million per year, and flood control benefits of \$1 million per year—using inflated values of TVA's old figures. Of course, the food production option may not conflict with using the dam for flood control. But in any event the farm value may be far larger than the benefits of closing the dam.

Mr. Chairman, I want to be understood precisely on this point. I am not testifying that the farm value of this project is controlling. The information I have is very preliminary and we need to compare costs and benefits of all options. I am trying to suggest that spending a few weeks, or even a few months, to find the answer to the central question of how to get the most for the taxpayer's dollar in this project is a prudent and potentially rewarding course of action, regardless of how one feels about dams, snail darters, and flooding the resting place of an Indian civilization.

On that latter point I think it is useful to point out that in addition to the snail darter, which has gotten all the attention, and the farmland—the importance of which I have emphasized—we need to pay some attention to the ancestral home of the Cherokee Indian, another endangered species, if I may use that word, in this project.



Eleven towns important to Cherokee history have been discovered in the area to be flooded. These include the towns of Tanasi, which gave its name to the State of Tennessee, and Chota, the legendary capital of the Cherokee Nation.

TVA and Department of the Interior representatives have met with the Cherokees to discuss how these valuable archeological sites can become a historical and cultural resource for all Americans. These resources could be developed with dignity to create jobs and economic activity for the Tellico area, much like another industry. I am not saying we should do this but it certainly deserves attention and evaluation.

Last, and by no means least, we should not ignore the snail darter and fish and wildlife generally in the area.

In order to make a comparative evaluation of all these values, TVA and the Department of the Interior are looking at the benefits and costs, both economic and environmental, of all potential options. My own view at the moment is that there are two basic options:

1. Closing the dam as planned and trying to find a way to accommodate the snail darter by transplantation or discovery of another habitat.

2. Utilizing the existing structure as a "flood control only" dam, or keeping it in a standby status while devoting the project lands to industrialization, farming, recreation, and a historic attraction.

As I said earlier, we will complete these studies just as fast as humanly possible and we will provide a report by August 10 hopefully giving you much more information than we have now.

Mr. Chairman, a number of more detailed questions about Tellico were raised in the record earlier that are not covered by this statement. I would like to offer the questions and answers for the record. Thank you for your attention. I will be happy to try to answer any further questions you or the other members of the subcommittee may have.

Mr. LEGGETT. Thank you. That is very helpful. I am also going to ask the General Accounting Office to do a study of the alternatives and have their report ready by August 10. This is an issue, of course, that stimulates everybody to riot, and emotions are extraordinarily high. I know of some of the press you got down in Monroe County and here the other day. Obviously nobody likes to waste Federal dollars.

On the other hand, I recall that I aggressively pursued a policy to abort \$13 billion of expenditures in an antiballistics missile program and I aborted an expenditure of \$3 billion in the B-1 program. So whether we abort a \$20 million investment in a structure that may be worth \$30 million today is not going to change heaven and Earth.

What we really need to do, it seems to me, is coolly and calmly evaluate all of the things that you have mentioned in your analysis.

One of the problems that we have is that under existing law even if you evaluate all of those items and come up with numbers that indicate that the structure ought to be completed while it can be, I think it is that inhibition of being unable to weigh the reasonableness of decision of the Cherokee heritage, plus or minus,

the future value of properties, that has frustrated many people in the country and particularly the two witnesses prior to you.

I am not going to ask you whether you favor amending the law or not. I think you have expressed yourself rather well on this project and you indicate that you are moving ahead aggressively, looking forward to a resolution of this matter as far as your staff and Interior staff are concerned by August 10. We are going to have the General Accounting Office working along with you or separately—hopefully separately—but they are going to have to use a lot of your information. Then we will come up with some figures which may be valuable.

Mr. Dingell.

Mr. DINGELL. I would only ask unanimous consent that the record be held open for purposes of including both the response to GAO and the cost-benefit figures Mr. Freeman has suggested his agency is putting together. I believe it would be most helpful in the consideration of the legislation before us.

Mr. LEGGETT. Certainly I do not see how we can hear the issue of endangered species extension on the floor until we have those figures. We have had testimony, of course, from the Corps of Engineers. We have had testimony from the Bureau. We have had testimony from the Forest Service. We have had testimony from the Department of Defense. It is the official view of all those agencies even though the Endangered Species Act, as enacted, causes them some problem in administration, they find they can accomplish their objectives within the framework of the existing law.

So as of this point this is really the only project that has been brought to the attention of the subcommittee in the country, where total preclusion has been effected by the bill shepherded by Mr. Dingell through the Congress back in 1973.

So we want to look at it very carefully. I do believe that our standard process for evaluating costs, benefits, and detriments would undoubtedly be considered along with preservation of the Cherokee heritage. That should be substantially studied and some value should be given to that, and that should be ground into our final conclusion.

Certainly there are those who are of the opinion today that even if we created three times as many jobs by not flooding the area, they want to complete the structure. There are, of course, views the other way. Even if there are no benefits to be derived, they want to complete the structure. Of course, there are lots of people who believe even if the structure has extraordinary value, we should use every vehicle at our command, whether it be Indians, endangered species, or whatever, to block the possibility of anything in the nature of change of our national environment.

We have to make some value judgments and hopefully we can get legislation that will allow for that purpose.

Mr. FREEMAN. May I just add one comment to your very generous response to my testimony. We are going to provide you with all the information that we can humanly assess by August 10, but I cannot anticipate how definitive our cost-benefit studies can be by that date. They will be as definitive as we can make them.

I should also like to add that there was something of a breakthrough Tuesday night when our scientists and the Interior Department scientists got together. There is a calm optimism about their ability to identify other habitats for the snail darter or to work out some arrangement through which the dam and lake could be a viable option pursuant to the existing law. That is not a sure thing, but it is also not a sure thing that the law has to be amended in order to complete the project as planned.

We will be able to say more on that on August 10, but the TVA scientists came away from the meeting delighted with the responsiveness of the Department of Interior. The August 10 report will not only deal with cost benefit but it will contain the best scientific judgment at the time of the prospects of transplantation. I would not think one should reach the judgment that the existing law is definitely going to constrain us from completing the project as planned.

Mr. DINGELL. Mr. Chairman.

Mr. LEGGETT. Mr. Dingell.

Mr. DINGELL. Very briefly, I observed you described you were going to do a cost-benefit study of the benefits of completing or not completing the dam, but I observe that there may still be other alternatives with regard to the Tellico project. What would be the possibilities, let us say, of building a smaller pool and a lower head on the river? Will that be included in your scrutiny, also, Mr. Freeman?

Mr. FREEMAN. Yes, sir. It is interesting that you raise that point. We talked about that Tuesday night with Interior, and it was decided that we had to look at every alternative in order to satisfy the suggestions that have been made. That alternative was discussed, and TVA took on the responsibility of evaluating it. The Interior Department is going to look at the all-scenic-river approach. And we also will be looking at the options that I described earlier. So I think we will be able to narrow the options down to the one or two that seem to have the best chance, and to hopefully tell you more than we can say this morning about the costs and benefits of those options.

Mr. DINGELL. Are you able to meet the August 10 deadline, because I think it is important to this committee that we have that information before us as we address further the question of Tellico and the Endangered Species Act, and what should be done with the problem that is lying before us.

Mr. FREEMAN. It was a self-imposed deadline, because of our appreciation of the urgency of the matter, and the posture of this committee and of the Congress. I guess I am cautious enough not to say anything absolutely, but we intend to meet that deadline. And we will meet it, barring something that I do not expect to happen.

Mr. DINGELL. Mr. Freeman, I want to commend you for a very reasoned and thoughtful statement, evaluating all of the circumstances here, that I think is very important to us as we consider the matter.

Mr. FREEMAN. Thank you, sir.

Mr. LEGGETT. Do you want to be recognized at this point? The Chair has to meet over in the Senate. Are you able to Chair the meeting here?

Mr. DINGELL. Yes.

Mr. LEGGETT. I would suggest that we go until maybe 12 o'clock, and then we can recess until 2 o'clock, and then we will continue on until 5 o'clock. That is be a reasonable schedule. Then, when we come back, Mr. Forsythe will be recognized, and we will proceed in the regular order.

I did indicate that Mr. Duncan, who is a Congressman from a nearby area interested in this project, would have an opportunity to ask questions, and certainly we will respect that offer that I made.

Mr. DUNCAN. Thank you, Mr. Chairman.

[Brief recess.]

Mr. DINGELL. The subcommittee will come to order.

At the time the subcommittee recessed, the Chair had recognized the gentleman from New Jersey, Mr. Forsythe, who is again recognized.

Mr. FORSYTHE. Thank you, Mr. Chairman.

We thank you very much, Mr. Freeman. We fully recognize that the bed was, as you said, on fire. Your statement, I think, is a very, very good statement especially considering the short period of time you have had to get a handle on many of the issues that are of importance to this committee.

At the top of page 3 of your testimony you lay out the percentages of the original benefits that were used to justify the project in 1968. Then later on in your testimony, you point out that, using current dollars, the hydropower and navigation benefits, which were rated at 22 percent of the total project, now amount to only \$3.5 million per year in value, according to your best estimates at this point in time.

That would leave 76 percent of the project's benefits which could be provided without the flooding of the project. Is that a correct interpretation?

Mr. FREEMAN. Certainly those are types of benefits that could be provided without the lake. We do not know whether the calculations will show that they are quantitatively as great, but we are making those calculations now. I think the calculation of recreation benefits is more an art than a science, and they are subject to broad discretion and interpretation by the agencies. I think that is one of the reasons why some reform in water resource planning is probably in the public interest. These particular benefits are a statement of the number of people who would frequent the lake, with a dollar amount assigned to each unit.

Our people, in a very impartial and constructive way, are going to evaluate the recreation benefits of the alternatives, on a comparable basis. They will try to put together as good a case for the alternatives as was put together for the original project. I think it is likely that the benefits will be comparable, but until the calculations are made, we cannot say conclusively.

Mr. FORSYTHE. I fully appreciate that your process of reevaluation of benefits is really just beginning, but it also would be true, would it not, that there may well have been substantial changes in the value of benefits as they were first looked at 30 years ago and then 10 years ago. According to the 1968 figures, navigation, was related as constituting 11 percent of the total project value in that

analysis, but your statement of present projections brings it down to only a half million dollars a year. That means if we look at the whole thing over again we are going to see dramatic changes from those early figures.

Mr. FREEMAN. I think that we will. I think the most dramatic change has been the increased value of the land, and the fact that the project now has to be looked at in a different posture——

Mr. FORSYTHE. Maybe food production.

Mr. FREEMAN [continuing]. Then it was in 1965. If I may say so, I do not think we are trying to prove or disprove that the project made sense in 1968. We have a different analysis today. We have a lot of sunk costs. I doubt that the Congress would have ever approved a project just to buy people's land to sell it or lease it back to them for farmland, but that situation is one that exists today. I think we have to figure out as a businessman, as an enlightened businessman representing all of the people of the country, how can we cash in on that investment and get the most for our money. It is a comparative analysis that will be somewhat different, because the land values did not play a very big role in the analysis in 1968. TVA was buying, not selling, in a sense, and I think the analysis we are developing will help inform the Congress and the people how we can complete this project and get the most out of it. That is a different analysis than was made in 1968. I do think that there have been fundamental changes in values, not only intangible values such as the Cherokees and the snail darters, but also tangible values such as the value of the farmland, which to my mind will play a very big role in this revised analysis. And it certainly plays a very big role in the minds of the landowners who had their land taken away from them.

Mr. FORSYTHE. Thank you. Just one more question. In your supplemental material, in answers to questions raised during the hearings, you relate that there were 70 snail darters transplanted in the Hiwassee River, and 61 in the Nolichucky.

Mr. FREEMAN. That is correct.

Mr. FORSYTHE. Then you go on to say that the estimate of the population now in the Hiwassee is between 1,500 and 1,900. We have heard some conflicting testimony on those numbers, also on what the time element can be before there can be any real knowledge whether the darter will be successful in the new location.

Can your expert add anything to our record on that?

Mr. FREEMAN. Yes, I believe he can. Before he does, I will give you the impression I have, having been briefed by the scientists from the Department of Interior and TVA. I do not know the exact number of snail darters that are in the Hiwassee River, but I believe the dispute is whether the life in that reservoir has existed for a long enough time to be able to conclusively decide that it is a habitat in which the darters can survive. I think there is a feeling that the darters have not lived there, no matter how many their number, long enough to be able to make that judgment. But that is one of the things we are working on.

I would like Dr. Ripley to give you his opinion.

Mr. FORSYTHE. I would like to make one more statement before the doctor answers. The charge has been made that only mathematical formulas were used to determine the present population,

instead of basing the estimates on actual knowledge derived from actual biological observations.

Mr. FREEMAN. The breakthrough in our discussion was that Interior agreed to let us mark the fish and count them, so that for the first time we will have an accurate count. If we only had mathematical formulas, it was because the Interior Department up to now has put constraints on our ability to go out and count them. But let me let Dr. Ripley answer.

Mr. FORSYTHE. All right. Thank you.

Dr. RIPLEY. That is quite right, that the range numbers of fish that we project in the Hiwassee are 1,500 to 1,900 fish. This represents our best population projection. That is based on age of fish stocked, survival rates, fecundity, or reproductive capacity, and known facts regarding sex ratio, spawning age, life span, and habitat quality. We have observed, of course, three breeding seasons in the Hiwassee and have projected, trying to be as objective as we possibly could, the total numbers of fishes that are in the river.

The only way we can get a better fix on this, as Mr. Freeman has said, and we were moving ahead very rapidly to do that, is to tag and recapture a number of fish in that population, but I feel, and my staff is convinced, that the figures are reasonable. Our estimates may be over, or under, but I think they are probably pretty good ball park figures.

Mr. FORSYTHE. Thank you.

Thank you, Mr. Chairman.

Mr. DINGELL. The Chair thanks the gentleman.

The Chair recognizes the gentleman from Kentucky, Mr. Hubbard.

Mr. HUBBARD. Mr. Chairman, thank you very much, and my colleagues.

Mr. Freeman, I welcome you to our subcommittee, and mention first off that you are the first Board Member of TVA that I have ever seen, and I have been a State senator for 8 years and a Congressman 3 years and 6 months, and during that time have represented thousands of people who receive their energy needs from Tennessee Valley Authority. You have been the most visible Board Member, and indeed, Chairman, that TVA has had since I have been in public office over these several years.

Though I have disagreed and agreed with President Jimmy Carter from time to time, I do believe that thus far his confidence in you has been justified by your display of integrity, intelligence, and your willingness to see the people and to visit with the people in the several States of the Tennessee Valley Authority, expressing to this Congressman and I am sure others your desire to take the message of TVA to the people.

You are aware, I hope, that TVA is not the most popular agency. The late Clifford Allen would agree, if living today, that he was elected to Congress on one issue. He was going to try to change TVA, and would do so in Congress.

I would mention to you that in our thinking about Tellico Dam and its justification, that we not forget that there are certain areas of the country, like western Kentucky, which I represent, which would not have the progress, indeed the jobs, the people, the population that we have today, but for Barkley Dam and Lake, and

Kentucky Dam and Lake, which were indeed opposed by some of these same people who now oppose Tellico Dam today. Some of those who oppose Tellico Dam oppose four-lane highways and other projects of the Federal Government which are intended to help the people and bring progress to this country.

I admit that I am not totally, I am far from totally informed, about the wisdom of the Tellico Dam project, but please keep in mind that as Members of Congress brag on David Freeman, and hope that the President will soon appoint two more to join you as a three-member board, that these people in Monroe County, Tenn., that you were with the other night are about the same as in my home county of Graves County, Ky. They are frustrated at the inaction and the change of direction of the Federal Government with their tax money, and I believe you will agree that these people in Monroe County, Tenn., really did not want the dam in the first place, but now that their tax dollars have been spent for it and they have seen the project nearly completed, they are anxious that the Federal Government go ahead with it; is that correct?

Mr. FREEMAN. I think that that was the view that was expressed to me very forcefully by a large number of people in Monroe County, and I sympathize with their aspirations. As I said in my testimony, the thing about this project that bothers me the most is that TVA has promised jobs to the people in that area. Many of the people are unemployed, and TVA has not really fulfilled those promises in 15 years. Since it took my predecessors 15 years to get the project to where it is now, which is not exactly a satisfactory position, I am asking this committee and the Congress to give us 15 weeks to take a hard look at the facts and to try to analyze a course of action that can complete the project.

In the meantime, sir, I have done everything that I humanly could do to begin to cash in on those promises. We are locating a TVA laboratory to analyze radiation monitoring samples on the project land, and that will bring sewer and water lines into the industrial park.

If I might say so, Mr. Hubbard, I sincerely appreciate your comments. I would like to associate myself with your sentiments. I grew up in the Tennessee Valley. I was a little boy that saw the valley before, and after TVA. Without the TVA dams and reservoirs, and the progress we have made, I do not know where we would be today. But I do not think we would be as well off, and we certainly would not have the recreation opportunities.

It is ironical that the dams on the main stem of the Tennessee River were all justified solely on the basis of flood control, navigation, and power. Recreation was not even a benefit in the cost-benefit studies. Yet most people probably say that the recreation potential is one of the great benefits. It certainly is in western Kentucky.

Mr. HUBBARD. You would remind us of TVA's land between the lakes.

Mr. FREEMAN. I certainly would.

Mr. HUBBARD. In western Kentucky.

Mr. FREEMAN. Which is one of the outstanding examples of enterprise by a public agency. But I think it is important that we not extrapolate the past into the future, and assume that just because

Kentucky Dam was and is vital, that completing the dams on the tributaries in precisely the same way is the best solution.

Mr. DINGELL. Would the gentleman yield?

I observe the former Governor of Tennessee, Governor Ellington, observed that it was rather easier to pick a tourist than it is a bale of cotton.

Mr. HUBBARD. Continuing briefly here, Mr. Freeman, I can assure you that though I am personally fond of you and believe you to be a good person and trying to do the right thing and one who works diligently, that still the great majority of the people that I represent are skeptical of TVA. They would rather see seven people as members of the Board of Directors of TVA with 4-year terms than to have three people with 9-year terms, and I would urge you to move with caution regarding the Tellico Dam, because the people in all the TVA area in the many States are watching your decision and the President's action, indeed the Congress action about this important dam, because the interesting thing about it is that after the tax money has been spent, after the Congress has appropriated the money and passed the legislation, after this particular project was not on the President's hit list, President Carter's hit list, all of a sudden now there is a delay because of a court decision, and now back to what we do with the Federal Government money already spent and the redtape involved.

I would say to you that the people of Tennessee and Kentucky, which you are familiar with, are just as frustrated as they are out in California about the abuse of their tax money.

I would urge you to move with caution as to what we do with the Tellico Dam project.

Mr. FREEMAN. I appreciate your comments very much, Congressman Hubbard, and I am moving with caution.

I am not about to decide this question until I get a colleague or two down there. And what I am urging in my testimony today is that all of us take a look at the facts before we jump to conclusions.

I certainly am not jumping. I am trying to raise the issues as I see them and as our staff develops them, because I think my position at the moment is pretty much as a chief of staff. I cannot speak definitively for the TVA board, and I am not going to make up my mind until I get some colleagues down there with whom I can consult. But I appreciate your heartfelt comments and advice and take them very seriously.

Mr. HUBBARD. One last question.

You and I sure would agree that Kentucky Dam and Barkley Dam, Kentucky Lake and Barkley Lake are big advantages for western Kentucky.

Mr. FREEMAN. No doubt about it whatsoever.

Mr. HUBBARD. In what way would the proposed completion of Tellico Dam project in Tennessee be different than these two projects, which are so successful and have meant so much to the people in every way?

Mr. FREEMAN. I think that each dam and reservoir project is a function of its particular site. It depends on how much hydropower is produced. For example, Kentucky Dam provides a substantial



block of power capacity that will keep the lights on around the clock. Tellico Dam doesn't add to our power-producing capacity one bit. It does provide a little more energy, no different than a solar collector offpeak, but it doesn't have the benefits to our power system that Kentucky Dam has.

Kentucky Dam is vital to navigation in the heart of the Tennessee River. We have built navigation facilities at Melton Hill nearby, but navigation potential in Tellico is tiny compared to the navigation benefits of Kentucky lock. Kentucky Dam, as you know, is the centerpiece of our flood control. It not only saves the people in the valley, but it stops floods on the Mississippi. You are comparing a giant in terms of benefits with a much smaller project.

That doesn't mean that the Tellico project is not a good project, but it does mean that we have to look at it carefully. We have to look at the value of the farmland; at the values of not flooding out the historic remains of the Cherokee Nation; indeed, at the values of the snail darter and the other fish and wildlife, which are certainly not zero. Then we have to come up with a 1978 evaluation, because this is a decision that will last for centuries.

I want to take your advice and not just jump to conclusion, and do this analysis in a careful way so that everybody on both sides of this fight will have a sense that they have been heard.

I know TVA is not popular. I understand that. But I think to the extent that we can assure a fair hearing for both sides of every issue, we could become maybe a little more popular in all parts of the valley.

Mr. HUBBARD. You are not the reason it is unpopular. You have got a good chance to make it workable.

Mr. FREEMAN. I will do my best not to blow it, sir.

Mr. DINGELL. The time of the gentleman has expired.

Mr. Freeman, at some cost to myself throughout the years, I had supported what my constituents regard as a dangerous socialistic undertaking in another part of the country, which not only competes unfairly with investor-owned utilities, but which engages in the stealing of industry from the district that I serve. Some of the behavior that I am observing now is causing me to reappraise that continued support. I am referring most specifically to TVA.

I am therefore quite pleased that you are there to fairly reappraise and analyze the actions of this agency, and it is my hope that we will get others who will perhaps engage in the same practice.

Mr. Freeman, you have indicated that the cost-benefit ratio is being revised. I have indicated to you earlier that it is the hope of the subcommittee that we will see that revision being done on the date appointed, and I would ask that you revise both the old and the new, so that we may have a full appreciation of what the cost benefit might be, so that we can include it in the record for purposes of this hearing.

You have also set forth at page 3 of your statement the language relating to the cost-benefit ratio. I observe that this is somewhat general. I am particularly interested in the value of industrialization and industrial sites.

I note that you have shoreline improvement, but that you do not have included in that statement of cost benefits the value of indus-

try which could be attracted, and the speed at which it could be attracted to include a judgment of how fast the industrial benefits would come on line.

I would assume first that the industrial benefits would not come on line immediately, am I correct?

Mr. FREEMAN. They would come on gradually. They are considered secondary benefits in the legalistic manner in which cost-benefit ratios are computed. I think there were some calculations made by TVA as to the benefits from industrialization, and there were a fairly large number of jobs that were projected.

Mr. DINGELL. But projected to come on gradually over a period of time?

Mr. FREEMAN. That is correct, and of course the question now is whether that would be changed and how it would be changed, with or without a reservoir. Industrialization is, I think, considered a secondary benefit. It was not a basis on which the project was justified initially, to the best of my knowledge at the moment.

Mr. DINGELL. I am particularly interested in the difference between the industrial benefits and the industrial jobs which would be achieved by either building or not building the dam.

Can you give us some judgment at this time and can you refine those figures in the future?

Mr. FREEMAN. Yes, sir; we will be refining those.

As I stated in my testimony, 95 percent of the industrial jobs in the Tennessee Valley are not related to a reservoir and a lake. Therefore, there is some reason to believe that this could be the pattern of industrial land development at Tellico. It could be 95 percent as good without the reservoir, but that is just simply a first guess.

Our people are taking a hard look. There are obviously some industries that are barge-oriented, and we will be making a more specific projection of the industrialization prospects with or without the reservoir. But throughout the Tennesse Valley the industrial jobs have come in part from barge-oriented activities, which have spinoff effects, but in large part from industries that rely on rail and highway transportation.

Mr. DINGELL. You have indicated that you propose to undertake the sale of industrial land and industrial development either with or without the filling of the dam, is that correct?

Mr. FREEMAN. That is correct, and as far as I am concerned, that is an aspect of the project that need not be delayed any further. I was interested, and somewhat surprised to find, that the TVA-owned land had been lying there while this dispute was going on without TVA really working as hard as it could with the local citizens to see the land developed. Among the efforts I have undertaken in the last few weeks is to reconstitute the industrial committees in the local counties down there.

I have met personally with the head of the local industrial development organization down there a couple of times. I have appointed a Tellico coordinator to report directly to me, and she will to be working more intensively with the local people. We are going to gear up the industrialization effort as best we can. I do not think industrial development needs to wait for the outcome of these cost-benefit studies and a decision on the best option to

complete the project. To the extent we can get jobs down there before a lake is formed, so much the better. We have started this process.

We have one facility which TVA is locating itself to get an industrial park started, and there is very little doubt in the minds of our staff that this industrial park of 300 acres can be filled up in a year or two.

There are people looking for plant sites all the time. There are some prospects that are appraising the Tellico area now. TVA does not go out and solicit industry away from Michigan, or anywhere else.

Mr. DINGELL. Our people think otherwise.

Mr. FREEMAN. Industry does come and look at the Tennessee Valley, and indeed organizations headquartered in Michigan locate subsidiary plants in the Tennessee Valley. That is going on.

Mr. DINGELL. Let me inquire. Can you give us for the record information as to the number of jobs which can be developed under the nonclosure of the dam, and under the other cost benefit ratio as opposed to the old cost benefit ratios?

Mr. FREEMAN. We will supply that information as best we can compute it in our August 10 report. But, I don't want to make any promises I cannot fulfill. We will be as definitive and as specific on that issue as we possibly can by August 10.

I recognize your interest in it. We will comply with it to the best of our ability.

Mr. DINGELL. Now, you have indicated if the dam is completed it could produce about 200 kilowatt-hours. That is 23 megawatts of hydropower. How would this addition help TVA meet peakloads and other electrical needs?

Mr. FREEMAN. It would not help us meet peakloads at all. You have to understand that there is no powerplant in Tellico Dam. The project design includes a canal which will connect Tellico Lake with Fort Loudoun Lake.

There will therefore be additional water that could flow through the Fort Loudoun generators which are designed to accommodate that water. But those generators can be operated to meet peaks to the fullest extent of their ability without the Tellico Lake.

What will be added is 200 million kilowatt hours of energy. But we sell electricity on the basis of capacity and energy, and there is no capacity value out of this dam. It is pure energy. I am not downgrading it. It is 200 million kilowatt hours, which is two-tenths of 1 percent of our needs.

But it does not add to our capacity to meet a peakload on the coldest day in the winter or the hottest day in the summer.

Mr. DINGELL. Now, can you indicate to us the number of jobs that would stem from use of the land for agricultural purposes as opposed to water bottom, Tellico Lake.

Mr. FREEMAN. The preliminary estimate we have—and I stress the word preliminary—is dependent upon the type of agriculture that can be developed. The number of jobs created could range from 650 to 2,900, built up over a period of years. But that is assuming we could develop the area for the highest quality farming that is possible. If you would like some elaboration on that, Dr.

Bond, who is the head of our valleywide agricultural program is right here.

Mr. DINGELL. I think we would like that, but I am not sure we have time for it now. I suspect we would like that for the record, if you please. But if you could give us some brief comment on this point, I think it would be appreciated.

Dr. BOND. The jobs we are talking about at the lower figure that Mr. Freeman mentioned, about \$8.5 million farm sales, and the 635 jobs, are based on the type of agriculture that was in Tellico previous to the time that TVA bought it and simply advancing the agriculture at a higher level of technology which we do throughout the region in our demonstration activities, with agriculture.

Then since the land is considerably better than the other land in that area, it does have a potential for vegetable production and other high value crops, and those types of enterprises provide more jobs, both on the farm and off the farm, than dairying and beef cattle production, which is the primary type of agriculture that would be in there now, unless we change it if we put it back into agriculture.

Mr. DINGELL. Now, Mr. Freeman, you have indicated that TVA has prior to your coming on to the board refused to evaluate alternatives to the dam and reservoir projects. Could you speculate as to why alternative approaches were not considered?

Mr. FREEMAN. I would prefer not to try to second guess what my former colleagues did before I came here. It is always dangerous to try to probe the minds of others. I think their stated reason was that in their opinion the Endangered Species Act was not applicable to the Tellico project, and that they had been directed by their appropriations committees to carry out the project that the committees had approved.

Of course, the Supreme Court decision disposed of those arguments.

To go beyond that would be to try to probe the minds of my former colleagues. I really don't think that would be terribly productive.

Mr. DINGELL. I think that is acceptable. Can you give us some appreciation of the level of public support for the Tellico Dam in the area?

Mr. FREEMAN. Well, I can tell you—and I think Mr. Duncan would agree with me—that the people who came to the meeting in Madisonville, and the people who came to the meeting in Vonore, want to see, as they put it, "their dam and their lake finished."

Of course, it is not accurate to say it is theirs since all the taxpayers paid for it, but that is the way they feel about it.

On the University of Tennessee campus, I am told by my friends who support the dam and lake—people I went to law school with—that the majority of the students are opposed to Tellico. That is what I am also told by public officials in the Tellico area, who are on the dam and lake side of the issue.

I am also told there are a number of landowners who oppose the project but who are too busy farming to come to the public meetings. But I think that Mr. Duncan has surveys that show a large percentage of the people who respond are in favor of it.

I would not want to dispute a judgment that the people who live very close to the project would prefer to see it completed as a lake. But there is a large amount of opposition. Quite frankly, I was impressed with the courage of one or two landowners who stood up in Madisonville, when there were 400 very angry people, and pointed out the value of the agriculture. They urged me not to be stampeded into a hasty judgment, and to really take a hard look at the value of this land for farming.

I think that we would do well to do so.

Mr. DINGELL. Now, for the record, would you make a submission which would give us appreciation of how the development of the project has moved forward as regards the different events which occurred relevant thereto, such as the enactment of the Endangered Species Act, the discovery of the snail darter, the times at which different court orders were issued, and the times at which the actual suspension of work went forward?

Mr. FREEMAN. Yes; I will be glad to do that for the record. Just as an observation—the TVA board in the past consistently took the position that these acts did not apply to the Tellico project, and the project continued except when it was constrained by court injunctions. With the exception of the first injunction, which took place under the Environmental Policy Act for 1½ years, and then more lately under the Endangered Species Act for 1½ years, the project construction schedule went merrily along.

Mr. DINGELL. In spite of the injunction?

Mr. FREEMAN. No; except the time when the agency was enjoined by the Federal court. But between injunctions, construction proceeded without being inhibited by the statutes that you mentioned.

But we will check that in a more detailed way, and supply it for the record.

Mr. DINGELL. I think that would be very useful.

[The information follows:]

## TELlico DAM PROJECT CHRONOLOGY

1936

March Report to Congress on the Unified Development of the Tennessee River System by the TVA Board of Directors notes that "complete canalization of the first 27 miles from the mouth of the (Little Tennessee) river could be accomplished by the construction of a dam and lock at Davis Ferry."

1942

April Project Planning Report No. 10-81 recommends construction of the Fort Loudoun Extension project across the mouth of the Little Tennessee River at a cost of \$10.7 million for flood control, navigation, and power.

June 27 Public Law 77-630 made funds available for the start of construction of the Fort Loudoun Extension.

October 20 The War Production Board advises TVA that World War II material shortages and priorities did not allow the Fort Loudoun Extension project (among others) to be commenced.

1963

October Project Planning Report No. 50-100 recommends construction of the Tellico project as a multipurpose water resource and regional development project at an estimated cost of \$41 million.

1965

Spring House and Senate Appropriations Committees hear debates concerning Tellico project. Congress postponed start of project for one year in order to have TVA perform a study of the effects of the canal connecting the two reservoirs on water quality.

1966

Spring House and Senate Appropriations Committees hear debates concerning Tellico project.

1966 (continued)

September 21 House debates Tellico project.

October 15 Public Law 89-969 (80 Stat. 1014) includes appropriation of 3.2 million for initial project construction.

November 8 TVA Board authorizes construction at estimated cost of \$45 million.

1967

March 7 Construction of concrete portion of dam begins.

November 20 Public Law 90-147 (81 Stat. 482) includes appropriation of \$7.2 million for continuing project construction.

1968

August 12 Public Law 90-479 (82 Stat. 715) includes appropriation of \$7.9 million for continuing project construction.

1969

March 28 Construction of concrete portion of dam completed.

December 11 Public Law 91-144 (83 Stat. 336) includes appropriation of \$5.9 million for continuing project construction.

1970

January 1 Effective date of NEPA.

October 7 Public Law 91-439 (84 Stat. 902) includes appropriation of \$4.8 million for continuing project construction.

1971

June 18 TVA issues draft environmental impact statement on project.

October 5 Public Law 92-134 (85 Stat. 375) includes appropriation of \$8 million for continuing project construction.

December 2, 22 Suit filed by Environmental Defense Fund and others in Federal District Court in Birmingham, Alabama, to enjoin the project. Suit transferred to the Eastern District of Tennessee, Knoxville, Tennessee.

1972

- January 7, 10 Hearing on plaintiffs' motion for preliminary injunction before Judge Robert L. Taylor.
- January 11 Preliminary injunction issued. Opinion reported at 339 F. Supp. 806 (E.D. Tenn. 1972). Construction halted.
- January 26 TVA files notice of appeal.
- February 10 TVA files 3-volume final environmental impact statement on project (statement notes that rare and endangered fish would be affected by project).
- August 25 Public Law 92-405 (86 Stat. 631) includes appropriation of \$11.25 million for continuing project construction.
- December 13 Court of Appeals affirms grant of preliminary injunction (Weick, McCree, and Miller, JJ.). Opinion reported at 468 F. 2d 1164 (6th Cir. 1972).

1973

- August 12 Snail darter discovered in Little Tennessee River.
- August 16 Public Law 93-97 (87 Stat. 328) includes appropriation of \$7.5 million for continuing project construction.
- September 17-20 Trial on merits of NEPA case.
- November 1 Judgment entered for TVA dissolving injunction and dismissing case. Opinion reported at 371 F. Supp. 1004 (E.D. Tenn. 1973). Plaintiffs file notice of appeal, and their motion for injunction pending appeal is denied by Judge Taylor. Work resumes.
- December Revised construction schedule issued calling for dam closure in January 1977.
- December 28 Endangered Species Act of 1973 enacted. Project now over half completed with over \$45 million of the then estimated \$69 million total project cost appropriated by Congress.

1974

- February 22 Sixth Circuit affirms dismissal of NEPA case. Opinion reported at 492 F. 2d 466 (6th Cir. 1974).
- August 28 Public Law 93-393 (88 Stat. 791) includes appropriation of \$16.9 million for continuing project construction.



1974 (continued)

- September 13 TVA enters contract with The University of Tennessee to study the snail darter.
- December TVA biological crews begin searching to determine if other populations of snail darters exist.

1975

- January 20 Petition to list snail darter as an endangered species filed with the Department of the Interior.
- June TVA biologists begin snail darter conservation program which includes transplantation of snail darters to the Hiwassee River.
- November 10 Snail darter placed on the endangered species list. The project is now approximately 75 percent complete with over \$75 million invested in the construction.
- December 26 Public Law 94-180 (89 Stat. 1047) includes appropriation of \$23.7 million for continuing construction of Tellico in FY 1976 and \$5.4 million for the transition period.

1976

- January 22 Snail darter scientifically described as a separate species.
- February 18 Hill v. Tennessee Valley Authority, filed in Federal District Court to enjoin project as in violation of Endangered Species Act.
- February 26 District court denies plaintiffs' motion for preliminary injunction.
- April 1 Snail darter's critical habitat designated as Little Tennessee River miles .5 to 17, effective May 3.
- April 29-30 Trial on the merits held in Hill v. Tennessee Valley Authority. Project about 80 percent complete.
- May 25 District court denies injunction and dismisses Hill v. Tennessee Valley Authority on the merits. Reported at 419 F. Supp. 753 (E.D. Tenn. 1976).
- July 12 Public Law 94-355 (90 Stat. 899) includes appropriation of \$9.7 million for continuing project construction.
- July 26 Sixth Circuit Court of Appeals issues injunction pending appeal and expedites argument.

1976 (continued)

- August 2 Sixth Circuit modified injunction to permit construction but enjoins closure of the dam pending appeal.
- October 12 Interior issues biological opinion that continued existence of snail darter will be jeopardized and its critical habitat destroyed if the dam is closed.

1977

- January 31 Sixth Circuit reverses district court decision in Hill v. Tennessee Valley Authority, 549 F. 2d 1064 (6th Cir. 1977). The project is now over 90 percent complete with \$102 million expended.
- February 24 District court enters injunction pursuant to the order of the Sixth Circuit. Order enjoins any work or activity on the Tellico project which may destroy or modify the critical habitat of the snail darter.
- May 31 TVA petitions Supreme Court for a writ of certiorari in Hill v. Tennessee Valley Authority.
- October 14 GAO issues a report recommending a new benefit/cost evaluation for Tellico and river valley alternatives.
- November 14 Supreme Court grants TVA's petition for writ of certiorari.

1978

- April 18 The Supreme Court hears oral argument on the snail darter case (Hill v. TVA).
- May 10 First consultation coordination meeting held at agency head level between TVA and Department of the Interior.
- June 15 The Supreme Court (6-3) affirms the decision of the Sixth Circuit. Opinion at 42 U.S.L.W. 4673.
- June 16 Formation of TVA-Interior task force for examination of alternatives to complete the Tellico project within existing law. Task force to issue report to Congress and the public by August 10.

Mr. DINGELL. The Chair observes that we have 10 minutes remaining. If the gentleman wishes, the Chair will recognize the gentleman from Tennessee, Mr. Duncan, at this particular time for 5 minutes.

We can recess now and come back, or recognize you for a bit of time now.

Mr. DUNCAN. Why don't we just come back.

Mr. DINGELL. That is fine.

Mr. Freeman, we are imposing greatly on you. Can you wait here while we run over and answer the vote and then return?

Mr. FREEMAN. Certainly. I am here to help the committee in any way that I can.

Mr. DINGELL. The subcommittee will stand in recess for a brief period of time while we answer to our names, and then return.

[Brief recess.]

Mr. DINGELL. The subcommittee will come to order.

The Chair observes at the time of the recess we were about to recognize our friend and colleague from Tennessee, Mr. Duncan. Although not a member of the committee, he is being afforded the courtesy of inquiring into this matter because of the very special concerns he has.

Mr. DUNCAN. Thank you, Mr. Chairman.

May I thank you and the committee, those not here also, for permitting me to make a statement, and sit in on this, what I consider very important vital hearings to, I think, the entire Tennessee Valley.

I am glad to welcome Mr. Freeman also to the House of Representatives.

Mr. Freeman, you mentioned the benefit-ratio as being quite low. But I don't think you mentioned the fact that in 1977, at President Carter's request, a team reviewed all the water projects and they found that the Tellico Dam had a ratio of 7 to 1.

Mr. FREEMAN. Mr. Duncan, to the best of my recollection I didn't say that the benefit cost ratio was quite low. I read some numbers. I have not made any judgments as to whether it is higher—

Mr. DUNCAN. Either said or inferred that.

Mr. FREEMAN. Perhaps I inferred it.

Mr. DUNCAN. Are you aware of that—

Mr. FREEMAN. Yes, I am.

Mr. DUNCAN. I am surprised that you did not mention that that report was in the files of the TVA. You went back to 1968, but you didn't say anything about the 1977 report.

Mr. FREEMAN. I believe that report is mentioned in the questions and answers that I supplied to the committee. If you give me just a minute, I will explain. That is a computation of remaining benefits compared to remaining costs.

There is no question in my mind that the Tellico project needs to be completed. On the basis of remaining benefits compared to remaining cost, it is going to be very beneficial to the country to complete it one way or the other.

What we do not have is a comparable calculation of the remaining benefits compared to the remaining costs of the alternatives. But if you take any project, even one that initially was very uneconomical, and you get it 98 percent of the way finished, the

remaining benefits compared to the remaining costs are going to be very high.

So, quite frankly, while I think the project ought to be completed, and I would argue very hard against anybody who says that we shouldn't complete it one way or the other, the fact that the benefit-to-cost ratio on a remaining basis is 7 to 1 doesn't impress me as being decisive on the question of how we should complete it.

It is decisive on the question that it should be completed. But I think we have to look at the remaining costs and the remaining benefits of other alternatives before we can decide conclusively.

The detailed questions and answers I submitted with my testimony reflect that study. I am familiar with it.

Mr. DUNCAN. It has been suggested by a number of members of this committee, and it has been brought to their attention, I think, incorrectly, that TVA failed to consult with the Department about Tellico and the snail darter. I am reading from a letter from Mr. Wagner.

I think the acting chairman brought this up also—about the failure to cooperate. This letter says:

We have cooperated and consulted fully with the service about the conservation of the snail darter from the very outset of this controversy, and have tried our best to resolve the problem.

Our efforts to conserve the snail darter began shortly after the fish's discovery and over a year before it was listed as endangered. Our efforts were coordinated to your staffs biweekly.

This is to the Secretary of the Interior.

I think Dr. Williams of the service testified that TVA had always cooperated fully and given the service any information requested.

Now, perhaps Mr. Ripley might say—is that a true statement or not? Since you have been in the initial—or will you agree that is a true statement?

Mr. FREEMAN. I certainly will. My testimony documents that.

Mr. DUNCAN. There was some concern TVA had not been cooperating.

Mr. FREEMAN. Within the restraints of board policy, TVA was fully cooperative. I think the Department of Interior people would agree. I don't think there is any dispute on that.

Mr. DUNCAN. May I introduce the letter as part of the record?

Mr. DINGELL. Without objection, the letter referred to will appear in the record at this point.

[The information follows:]

Hon. CECIL D. ANDRUS,  
*Secretary of the Interior,*  
*Washington, D.C.*

DEAR MR. SECRETARY: This is in further response to your March 16 letter to Mr. Lynn Seeber, our General Manager.

We welcome the opportunity to discuss the snail darter matter. The discussions, however, should be held on a basis other than the narrow confines of your letter. They certainly should be directed to the transplantation of snail darters to other suitable rivers in an effort to assure the species survival, and also permit the project's completion and use on the basis on which Congress has made appropriations for the project. The Senate and House Appropriations Committees' reports for 1975, 1976, and 1977 direct that the Tellico project be completed as quickly as possible in the public interest; Congress has appropriated funds to complete the Tellico project based on those reports and with full knowledge of the conflict between the project and the snail darter; and the specific provisions of the 1977

Appropriations Act (Title IV of Public Law No. 95-96, 91 Stat. 797 (1977)), make \$2 million in appropriations available to TVA for transplanting endangered species "to expedite project construction." Congress is presently considering the Administration's budget which requests \$1.846 million to complete Tellico. Under these circumstances, it is clear to us that TVA is not at liberty to ignore those congressional directives and abandon the Tellico project as planned and built. Consequently, we are unwilling to discuss the alternative mentioned in your letter.

We recognize, of course, that the Comptroller General's report to Congress on Tellico recommended that the project be restudied to determine whether it should be used or scrapped in favor of an alternative use of the Little Tennessee River Valley. We informed Congress that we did not think that the factual material reported by GAO supported its recommendation and that the recommendation should not be followed. We pointed out that this project was studied in 1977 by a team from CMB, CEQ, and TVA, as a part of President Carter's review of water projects, and found to have a remaining cost benefit ratio of 7:1. Congress has not acted on the GAO recommendation, and until it does, we cannot act on such a recommendation that is contrary to express congressional directives. As you may know, this report has been heavily criticized, even by one of the Congressmen who asked for it (124 Cong. Rec. H1462 (daily ed. Feb. 23, 1978) (remarks by Rep. Duncan)).

Among other considerations, in light of Congress's action and the advanced stage of the Tellico project, it is our view that the best way to accommodate both the snail darter and the Tellico project is through transplants to other suitable habitats. Congressional action appropriating funds for construction of Tellico, and to "relocate" the darter, clearly compels this view. Accordingly, we believe that a meeting to discuss further transplants would be productive and in furtherance of the spirit of both sections 3 and 7 of the Endangered Species Act and Public Law No. 95-96.

We are puzzled by the U.S. Fish and Wildlife Service's repeated denials of our permit applications to transplant snail darters to other suitable rivers. These proposed transplants are designed to establish new populations to better assure the species' survival. Our proposals to transplant snail darters to a Holston River site previously identified by TVA and the Service as a priority transplant site, are biologically sound and are in accord with the intent of Congress, specifically Title IV of Public Law No. 95-96, 91 Stat. 797 (1977), which provides for transplants "as may be necessary to expedite project construction."

The transplants contemplated by Public Law 95-96, however, are being prevented by the Service's repeated denials of our transplant permit applications. Moreover, while the Service rebuffs all TVA attempts to establish new populations of snail darters, your Solicitor recently stated in an appendix to TVA's brief in the Supreme Court in the Tellico/snail darter case:

"Since closing the dam and filling the reservoir would immediately make transplantation efforts impossible, it follows that Congress specifically contemplated in the appropriations act itself that dam closure must await evidence of a successful transplant" [at 10A].

The Department of the Interior apparently takes the position that closure of the dam must await a successful transplant, while at the same time denying all transplant applications. Not only are these positions inconsistent, but the continuing refusal to grant the requested transplant permits is, in our opinion, a frustration of the purposes of Public Law No. 95-96.

In light of express congressional intent that transplants continue and the biological good sense of expanding the snail darter's range, we request that the Service reconsider the denial of our most recent permit application. Our people are available to provide the Service with any additional information which might be helpful in reviewing our permit application. If another application is needed, please let us know. We have asked Dr. Thomas H. Ripley, Director of TVA's Division of Forestry, Fisheries, and Wildlife Development, to arrange a meeting to discuss further transplants.

This brings us to two points of serious concern to TVA. Your Solicitor, in an appendix to TVA's brief before the Supreme Court, suggested that TVA has not consulted with your Department about the Tellico/snail darter problem as required under section 7 of the act. We have cooperated and consulted fully with the Service about the conservation of the snail darter from the very outset of this controversy and have tried our best to resolve the problem. Our efforts to conserve the snail darter began shortly after the fish's discovery and over a year before it was listed as endangered. Our efforts were coordinated with your staffs; biweekly progress reports and special reports were furnished to keep them current on all significant efforts and developments that occurred; staff consultation meetings were held at

various stages to plan certain steps or resolve disagreements; and numerous other conversations, discussions, and meetings were held along the way. Dr. Williams of the Service testified that TVA had "always cooperated fully" and given the Service "any information" requested. In Mr. Greenwalt's October 12, 1976, letter to TVA, giving us the Service's biological opinion on the effects of Tellico on the snail darter, he stated that "your agency's cooperation in the consultation process on the Tellico Dam project has been appreciated." Indeed, even though TVA disagreed as to the biological desirability of the Service's plan to restock the Little Tennessee River with snail darters because the fish is unable to naturally sustain a population there, TVA assisted in those restocking operations. In short, we have consulted and cooperated with your Department in every reasonable way to conserve the snail darter short of scrapping the virtually completed Tellico project—a project which we have been directed repeatedly by Congress to complete in the public interest.

The basis given for your Solicitor's statement that TVA has not consulted is that TVA has been unwilling to discuss what he terms an "alternative" suggested in the appendix to the TVA brief and in your letter to Mr. Seeber is a scenic river development which calls for the complete abandonment of the Tellico project and its major purposes of flood control, hydroelectric power, navigation, and employment opportunities, and for the waste of over \$50 million in publicly invested funds. The hydroelectric benefits cannot be denigrated by saying that they are small as compared to the whole of TVA, the Nation's largest power supplier. For example, Tellico would provide more electricity than was generated at several of TVA's dams (Chatuge, Nottely, South Holston, Watauga, Boone, Melton Hill, Tims Ford) in the year ending September 30, 1977. The Government, as well as other knowledgeable individuals and entities, is now recognizing that the country must utilize these renewable nonpolluting sources to help alleviate the increasingly acute energy problems. We simply do not think that the act contemplates the abandonment of a congressionally authorized project such as Tellico which was over three-quarters complete when the species was discovered and listed as endangered. Neither do we think that section 7 requires "consultation" about an "alternative" which requires scrapping the nearly completed project. As the district court expressly held:

"Completion of the dam and impoundment of the river are integral parts of a project begun almost a decade ago. TVA has been moving toward this goal since ground was first broken. When the snail darter was listed on the endangered species list in November 1975, TVA was fairly close to completion of the project which has been consistently funded by Congress since 1966.

"The nature of the project is such that there are no alternatives to impoundment of the reservoir, short of scrapping the entire project. Modifications or alterations to the project cannot be made at this time which will insure compliance with the Endangered Species Act. Requiring TVA to consult with other agencies about alternatives not reasonably available to it would be to require TVA to perform a useless gesture" [*Hill v. Tennessee Valley Authority*, 419 F. Supp. 753, 758 (E.D. Tenn. 1976)].

Finally, we request that you consider the cavalier manner in which the Service handled TVA's petition to delist the Little Tennessee River as critical habitat for the snail darter. By letter dated February 28, 1977, we sent you a copy of TVA's petition to delist, the original of which was mailed the same day to the Director of the Service. Because of the importance of the matter to TVA and the region, we asked for an opportunity to meet with you and discuss the matter in some detail. Your April 18 reply, signed by Jim Joseph, suggested that a meeting be deferred until the petition had been thoroughly reviewed.

On December 5, 1977, over nine months after the filing of the petition to delist and after several TVA inquiries about the petition, we were informed by letter from the Associate Director of the Service that the petition had been denied. No consultation with TVA had occurred. No notice that the petition was being reviewed had been published in the Federal Register, and the December 5 letter gave no reasons for the denial. In fact, the letter stated that the petition had been indirectly denied as a part of the Service's July 6, 1977, denial of TVA's application for a permit to transplant snail darters. Yet, TVA was not informed of this until December 5, 1977, over five months after the decision was apparently made. Even then, there was a great deal of confusion in the Service about the status of the petition, as several Service staff members familiar with the petition informed TVA staff in late November that a decision had not as yet been made.

We feel that a matter of this importance should receive the thorough review suggested in your letter to us rather than being denied indirectly as a part of the denial of another separate matter. The petition was supported by detailed biological

evidence which, as far as we know, is essentially undisputed; and we believe that if it receives a thorough, objective review it will be granted.

Again we want to emphasize our desire to work with the Service to conserve the snail darter. Through the combined effort of our organizations and through transplants of snail darters to other suitable rivers as contemplated by Public Law No. 95-96, we believe that a successful accommodation of both the project as now built and the snail darter can be achieved.

This letter reflects the views of myself and Director Jenkins; and Director Freeman will respond separately.

Sincerely yours,

AUBREY J. WAGNER,  
*Chairman.*

Mr. DUNCAN. With the exception of the dry dam idea, every alternative which you have listed has been proposed, argued, debated, and rejected by the Congress and in the initial courts. All of these points have been argued.

I was here in 1966 when we argued these things before the Congress. The people wanted the Tellico Dam. There was only a small number of people that came to Washington. We had plane-loads, busloads, and resolutions from county courts. But all these alternatives have been argued at one time or another.

The farmland that you mentioned that might bring \$5 million a year, the roads have gone, the barns have gone, and in many instances the bridges have been gone. Also, I think that something that you have not realized, that flood seasons and crop seasons overlap in our valley. Winter grain crops would be destroyed and spring and even summer crops would be lost if we went to the dry dam aspect of it.

May I ask you also, the spillway section of the dam wasn't designed or built for the type of operation that you are talking about. I used to be a prosecutor. You said you couldn't convict on circumstantial evidence. But on circumstantial evidence that you favor the dry dam concept.

Is that true, that the spillway wasn't designed for that purpose?

Mr. FREEMAN. I will begin my answer by saying I do not favor the dry dam concept. People have been trying to paint me into that corner ever since I suggested that it is something that needs to be looked at.

Now, I have been in fights myself. I recognize at some stages of the game, when people are for something, they say either you are "for me or again me."

In a sense my coming on the TVA Board at this time and simply raising these questions, which I recognize, Mr. Duncan, were raised in the past, have caused people to feel I'm opposed to the lake.

I appreciate that sentiment, but I have not come out in favor of anything.

Mr. DUNCAN. Did I understand you to say you do not favor the dry dam aspects?

Mr. FREEMAN. I favor evaluating that alternative on the basis of 1978 and future costs and benefits. Just like the TVA looked at the future benefits and future costs of the project itself and came up, as you correctly state, with a 7 to 1 ratio—I want to look at a comparable comparison of the alternative.

My feeling is that if the project as it is designed is even half as good as the proponents say it is, it will stand up to that comparative analysis, and win out.

Mr. DUNCAN. It satisfied the President of the United States, didn't it, when he went ahead and recommended the completion of the dam?

Mr. FREEMAN. I don't believe that it is correct to say that President Carter has ever taken a position on this in his administration. The dam project was under injunction by the courts, and the budget of President Carter up to now has assumed that the project was under injunction.

Mr. DUNCAN. You will find he recommended in his budget proposal—

Mr. FREEMAN. He recommended—

Mr. DUNCAN. The Tellico Dam, yes, sir.

Mr. FREEMAN. I won't dispute you on that, but it is not my impression that the administration has taken a position on this controversy one way or another.

Mr. DUNCAN. They did not put it on their hit list?

Mr. FREEMAN. They didn't put it on the hit list because it was under injunction at the time. It was on the Federal court's hit list.

Mr. DUNCAN. I am amazed that you would play down the power value of the dam which I understand would generate enough power to provide 20,000 homes; is that correct?

Mr. FREEMAN. Mr. Duncan, I am not playing down the value. I am simply stating it in terms of the numbers it would produce. The 200 million kilowatt-hours might very well be the equivalent of heat for 20,000 homes, but it would not supply heat for those homes on the coldest day of the winter because it will not add to the capacity of our power system.

Mr. DUNCAN. Wouldn't it come in handy just this week when you announced this cutback?

Mr. FREEMAN. It will save us \$3 million a year, and I am putting that value on it. We will further refine those figures if they are wrong. I am not saying it is without value. It would be worth \$3 million a year in saving of fuel, and that is a lot of money, but the question is whether we could have values greater if we went another way.

Mr. DUNCAN. Wasn't the entire industrial area planned on a navigable waterway?

Mr. FREEMAN. Not the entire industrial area. There was a 300 acre light industry tract that we are now starting to fill up that is not lakeshore property. The other industrial area was planned assuming there would be a lake, and there may still be a lake.

Mr. DUNCAN. They were designed to that extent, isn't that correct?

Mr. FREEMAN. The question is whether that land can be used and be just about as useful with or without a lake. I am not coming down on either side of it, but I think it is important to ask the question and answer it.

I might say to you, sir, that the Tennessee Valley Authority in the last 10 years has not taken a look at the alternatives in a comparable way to the project as planned. In this 1977 report that contains the remaining benefits of 7 to 1, I was quite surprised to read the following under the heading Alternatives: "Question: Are reasonable alternatives available? Answer. None."

I just don't believe that is a completely accurate answer.



Mr. DUNCAN. TVA has said actually that sites on the main channel with highway and rail facilities are almost gone. Do you agree with that statement?

Mr. FREEMAN. There are 5,000 acres of sites in the Tellico land that do have highway and rail and it may or may not have barge transportation.

Mr. DUNCAN. This would be 20 miles of new waterway for heavy industry. What you are talking about is light industry, the kind we have at Tellico and Madisonville, that would not be suited for the heavy industry that we want in the Valley, that we have envisioned and that we promised the people in the Valley they were going to have.

Mr. FREEMAN. Sir, we will take a look at what can be done with that, and with or without a reservoir, and on the basis of our most impartial evaluation we will come up with it. I am not saying one way or the other, except I think it is reasonable to take a look.

I was at Melton Hill Reservoir the other day and there is a lot of land on the lakefront that has been there for years where no industry has yet located. It is not accurate to say we have used up all the lakefront land, or if we form a lake, the place is going to become an industrial area very quickly.

Mr. DUNCAN. As far as the free-floating, Tellico has always been one of the most controlled streams in the country. We talk about development of other recreation, maybe moving Indians out of Maine or somewhere. Isn't it a fact since this has been a controlled stream with dams upstream, the only commercial development that has been on that stream has been Hoss Holt's store and Chota boat dock? Isn't that about all that is on there?

Mr. FREEMAN. I won't dispute that statement. I don't know, sir, but that is not necessarily suggestive of what could happen in the future with an active plan of development. That needs to be looked at in the context of 1978. There are a lot of areas that have not been developed for a long time where TVA came in with a plan of development and changed it.

I agree with you. I think if we do nothing, not a whole lot will happen and I am not for that. I think we need to finish that project in a way that will bring the jobs to the people. All I want to do is figure out the best way to do it.

Mr. DUNCAN. Weren't these historical and Indian sites, just wheat fields and corn fields?

Mr. FREEMAN. I don't know for sure what they were in the past. A lot of them I am told were owned by lawyers in Knoxville that kept the tracts for tax purposes.

Mr. DUNCAN. The TVA spent over \$2 million for archeological research by the University of Tennessee. Old Fort Loudoun Dam was pulled down with a view of having the lake.

Mr. FREEMAN. According to the Cherokee Indians, 90 percent of those remains have not been dug up. Of course, they are very disturbed by the efforts in the past that have disturbed the graves of their ancestors.

Mr. DUNCAN. I would like to talk further. We have a final vote on the floor. I would like to get with you again some time.

Mr. FREEMAN. I would love to.

Mr. DUNCAN. Thank you.

Mr. DINGELL. The Chair thanks the gentleman. The Chair has a curiosity about it.

We pointed out this project we studied in 1977 was found to have a remaining cost-benefit ratio of 7 to 1. It would be most helpful if you will give us a statement of what that remaining cost ratio of 7 to 1 means.

Mr. FREEMAN. We will for the record, but just for the purposes of right now, it means that when a project is 98 percent complete, and your costs represent 1 or 2 percent of the original costs, you get a pretty high benefit-to-cost ratio for finishing it. I don't think anybody would quarrel with that 7 to 1.

The lands have been bought. The remaining costs are a couple of million dollars. Obviously, you are going to get a very high benefit-to-cost ratio in those circumstances and everybody agrees that the project should be finished one way or the other. The question is, what way would bring the most good to the taxpayers' investment.

The alternate comparable study of the alternative remaining benefits has not been put together.

Mr. DINGELL. The Chair would appreciate you giving us further amplification of what the overall cost-benefit ratio was at the time this letter was written so we would have it.

Mr. FREEMAN. The original benefit-cost ratio as computed by TVA was 1.7 to 1. I was intrigued that in 1971 when they made a cursory analysis of a so-called "scenic river" option that they had a 2.5-to-1 benefit-cost ratio, but, of course, the project was already well underway so the benefits to remaining cost was much higher than 1.7.

We will put all those numbers together and present them the best we can by August 10.

Mr. DINGELL. The Chair observes the correspondence here is most helpful, and the Chair will request that you submit to us also the response which was received by your agency from Secretary Andrus to the communication which we will insert in the record.

The Chair also observes without objection that it will be inserted in the record and requests staff to secure from Interior any further correspondence that may be relevant to this.

[The information follows:]



## United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

APR 28 1978

(AIR MAIL SPECIAL DELIVERY)

(Envelope postmarked 5-3-78)  
(Received 4:30 p.m. 5-3-78)

Mr. Aubrey J. Wagner  
Chairman  
Tennessee Valley Authority  
Knoxville, Tennessee 37902

Dear Chairman Wagner:

This will confirm arrangements made through Larry Calvert's Office on April 26, 1978, to defer the meeting on the Tellico Project, at your request, from April 28th to May 10, 1978, at 9:30 a.m., here at the Department. The purpose of that meeting is to discuss matters referred to in our letter to you dated April 17, 1978, a copy of which is attached.

We have also received a letter dated April 20, 1978, from H. N. Stroud, Jr., Acting General Manager of TVA, adverting to an understanding reportedly arrived at through communication with this Office that our April 17th letter was sent in error and should be destroyed. That is not our understanding of the conversation in question, but in any event, this will reconfirm our agreement to resume consultation under Section 7 of the Endangered Species Act.

We regret that mutual scheduling difficulties have necessitated two postponements of this meeting since our letter to you of March 16, 1978. However, we are gratified that a date has finally been set and look forward to exploring with you, Mr. Freeman, and Mr. Jenkins, the various alternatives for preserving the snail darter.

Sincerely,

*Leslie D. Andrew*  
SECRETARY

TENNESSEE VALLEY AUTHORITY  
Knoxville, Tennessee 37902

APR 26 1978

Office of the Board of Directors

The Honorable Cecil D. Andrus  
Secretary of the Interior  
Washington, D.C. 20240

Dear Mr. Secretary:

Thank you for your April 21 letter responding to my earlier letter.

We are glad to meet with you as we indicated in my earlier letter to discuss ways of preserving the snail darter without depriving the people of this region of the benefits of Tellico as now built. We understand that satisfactory arrangements have been made with your office to meet with you on May 10 at 9:30 a.m. in Room 6151 at the Department of the Interior. This is a matter of utmost importance to TVA and the people of this region and we welcome this opportunity to discuss it with you.

Sincerely yours,

Aubrey J. Wagner  
Chairman



## United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

APR 21 1973

Aubrey J. Wagner, Chairman  
Tennessee Valley Authority  
Knoxville, Tennessee 37902

Dear Chairman Wagner:

As discussed with your office, I look forward to meeting with you and Directors Freeman and Jenkins on Friday, April 28, at 2:30 p.m., here in my office. The discussions are of the utmost importance and I appreciate the opportunity to meet with the three members of the Tennessee Valley Authority on this timely matter.

Sincerely,

*Leila D. Andrews*  
SECRETARY

cc: S. David Freeman, Director  
Tennessee Valley Authority

William L. Jenkins, Director  
Tennessee Valley Authority



United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

Mr. Aubrey J. Wagner  
Chairman  
Tennessee Valley Authority  
Knoxville, Tennessee 37902

APR 17 1978

Dear Chairman Wagner:

We are pleased to receive your letter of March 31, 1978, and that of Mr. Freeman dated April 6, 1978, accepting our offer to reinstitute consultations on alternatives for preserving the snail darter. We are encouraged by your recommendation for broader discussions and by Mr. Freeman's suggestions. We think all alternatives for snail darter preservation should be discussed and that it would be best not to confine the subject matter at this time.

The important thing is to get these discussions started in order to work out a settlement of this matter as soon as possible. I would suggest that you, Mr. Jenkins, and Mr. Freeman come to the Department in Washington to meet with us on April 21, 1978.

Again, we welcome your positive response and look forward to our discussions.

Sincerely,

(Sgd) James A. ~~Freeman~~

Acting SECRETARY

cc: Mr. William L. Jenkins  
Director, TVA

Mr. S. David Freeman  
Director, TVA

Director, OES  
Chairman, CEQ  
U.S. Attorney General, ~~et al.~~

TENNESSEE VALLEY AUTHORITY  
Knoxville, Tennessee 37902

Office of the Board of Directors

April 6, 1978

The Honorable Cecil D. Andrus  
Secretary of the Interior  
Washington, D.C. 20240

Dear Mr. Secretary:

This is my response to your letter of March 16 to TVA requesting consultation on the Tellico Project.

I am much less concerned about the snail darter than I am the people in the Tellico area who are without jobs, people whose welfare is endangered by this seemingly endless dispute. I take your letter as an offer to apply some common sense to the current impasse by fashioning a reasonable compromise that will enable the government to complete the project promptly.

In my view, such a compromise project must provide jobs for people in the area as well as other benefits for present and future generations that will maximize the government's investment.

I have made no judgment on the Tellico Project, but I have been briefed by the TVA staff. Based on that briefing, I believe such a compromise is possible under existing law. There are alternatives to the current Tellico proposal other than scrapping the project. The TVA staff is now studying such alternatives.

For example, one option would be to utilize the near completed dam as a "dry dam." Such an alternative project would provide more flood control protection in a severe flood than the existing project; would provide food from the rich bottom land valued in excess of \$5 million per year, rather than a small quantity of hydropower (less than 1/5 of 1 percent of TVA's needs) with a comparable or smaller value; would maintain a free-flowing stretch of river for recreation rather than forming a lake; would preserve the ancestral home of the Cherokees as a source of tourism rather than flooding these artifacts; and would provide industrial sites and jobs comparable to the existing project.

I do not know whether such a redesigned project would be superior to the current design or not because the TVA staff studies have not been completed, and there has been little or no public discussion of the comparative benefits of the two approaches by the public. I do know that such a project is a possibility.

The Honorable Cecil D. Andrus

April 6, 1978

Another possible option for compromise would be to go ahead with the industrial development immediately and monitor the snail darters in the Hiawassee Reservoir for a period of three years, and if the fish survive, TVA would then be free to form the lake if that best served the public interest.

The choice is not the snail darter or the dam. The industrialization and other benefits to the economy can take place with or without another lake as soon as the controversy can be settled and the choice industrial sites TVA now owns can be made available with certainty.

A decision by the Supreme Court will not end this controversy because each side has stated it will carry on the fight in another forum if it loses. The current litigation and dispute can thus lead only to further delay and waste of the taxpayer's money. And contrary to the TVA position, forming a permanent lake is not vital to the Tellico project and may not even be the option with the greatest public benefits.

I therefore favor consultations to review the possible alternatives under existing law with an early deadline to hammer out a compromise that places the highest priority on benefits for people. I also favor asking the court to defer judgment on this case for a six-month period to permit the parties to work out such a compromise in the public interest.

Sincerely,

S. David Freeman  
Director

SDF:EB

cc: Mr. Charles H. Warren, Chairman  
Council on Environmental Quality  
722 Jackson Place  
Washington, D.C. 20006

Office of the Attorney General  
Department of Justice  
Washington, D.C. 20530

Office of the Solicitor General  
Department of Justice  
Washington, D.C. 20530

Mr. Elmer B. Staats  
Comptroller General  
General Accounting Office Building  
Washington, D.C. 20548

Mr. James T. McIntyre, Jr.  
Director  
Office of Management and Budget  
Executive Office Building  
Washington, D.C. 20503



TENNESSEE VALLEY AUTHORITY  
KNOXVILLE, TENNESSEE

MAR 31 1978

OFFICE OF THE BOARD OF DIRECTORS

The Honorable Cecil D. Andrus  
Secretary of the Interior  
Washington, D.C. 20240

Dear Mr. Secretary:

This is in further response to your March 16 letter to Mr. Lynn Seeber, our General Manager.

We welcome the opportunity to discuss the snail darter matter. The discussions, however, should be held on a basis other than the narrow confines of your letter. They certainly should be directed to the transplantation of snail darters to other suitable rivers in an effort to assure the species' survival, and also permit the project's completion and use on the basis on which Congress has made appropriations for the project. The Senate and House Appropriations Committees' reports for 1975, 1976, and 1977 direct that the Tellico project be completed as quickly as possible in the public interest; Congress has appropriated funds to complete the Tellico project based on those reports and with full knowledge of the conflict between the project and the snail darter; and the specific provisions of the 1977 Appropriations Act (Title IV of Public Law No. 95-96, 91 Stat. 797 (1977)), make \$2 million in appropriations available to TVA for transplanting endangered species "to expedite project construction." Congress is presently considering the Administration's budget which requests \$1.846 million to complete Tellico. Under these circumstances, it is clear to us that TVA is not at liberty to ignore these congressional directives and abandon the Tellico project as planned and built. Consequently, we are unwilling to discuss the alternative mentioned in your letter.

We recognize, of course, that the Comptroller General's report to Congress on Tellico recommended that the project be restudied to determine whether it should be used or scrapped in favor of an alternative use of the Little Tennessee River Valley. We informed Congress that we did not think that the factual material reported by GAO supported its recommendation and that the recommendation should not be followed. We pointed out that this project was studied in 1977 by a team from OMB, CEQ, and TVA, as a part of President Carter's review of water projects, and found to have a remaining cost benefit ratio of 7:1. Congress has not acted on the GAO recommendation, and until it does, we cannot act on such a recommendation that is contrary to express congressional directives. As you may know,

The Honorable Cecil D. Andrus

MAR 31 1978

this report has been heavily criticized, even by one of the Congressmen who asked for it (124 Cong. Rec. H1462 (daily ed. Feb. 23, 1978) (remarks by Rep. Duncan)).

Among other considerations, in light of Congress's action and the advanced stage of the Tellico project, it is our view that the best way to accommodate both the snail darter and the Tellico project is through transplants to other suitable habitats. Congressional action appropriating funds for construction of Tellico, and to "relocate" the darter, clearly compels this view. Accordingly, we believe that a meeting to discuss further transplants would be productive and in furtherance of the spirit of both sections 3 and 7 of the Endangered Species Act and Public Law No. 95-96.

We are puzzled by the U.S. Fish and Wildlife Service's repeated denials of our permit applications to transplant snail darters to other suitable rivers. These proposed transplants are designed to establish new populations to better assure the species' survival. Our proposals to transplant snail darters to a Holston River site previously identified by TVA and the Service as a priority transplant site, are biologically sound and are in accord with the intent of Congress, specifically Title IV of Public Law No. 95-96, 91 Stat. 797 (1977), which provides for transplants "as may be necessary to expedite project construction."

The transplants contemplated by Public Law 95-96, however, are being prevented by the Service's repeated denials of our transplant permit applications. Moreover, while the Service rebuffs all TVA attempts to establish new populations of snail darters, your Solicitor recently stated in an appendix to TVA's brief in the Supreme Court in the Tellico/snail darter case:

Since closing the dam and filling the reservoir would immediately make transplantation efforts impossible, it follows that Congress specifically contemplated in the appropriations act itself that dam closure must await evidence of a successful transplant [at 10A].

The Department of the Interior apparently takes the position that closure of the dam must await a successful transplant, while at the same time denying all transplant applications. Not only are these positions inconsistent, but the continuing refusal to grant the requested transplant permits is, in our opinion, a frustration of the purposes of Public Law No. 95-96.

The Honorable Cecil D. Andrus

MAR 31 1978

In light of express congressional intent that transplants continue and the biological good sense of expanding the snail darter's range, we request that the Service reconsider the denial of our most recent permit application. Our people are available to provide the Service with any additional information which might be helpful in reviewing our permit application. If another application is needed, please let us know. We have asked Dr. Thomas H. Ripley, Director of TVA's Division of Forestry, Fisheries, and Wildlife Development, to arrange a meeting to discuss further transplants.

This brings us to two points of serious concern to TVA. Your Solicitor, in an appendix to TVA's brief before the Supreme Court, suggested that TVA has not consulted with your Department about the Tellico/snail darter problem as required under section 7 of the act. We have cooperated and consulted fully with the Service about the conservation of the snail darter from the very outset of this controversy and have tried our best to resolve the problem. Our efforts to conserve the snail darter began shortly after the fish's discovery and over a year before it was listed as endangered. Our efforts were coordinated with your staffs; biweekly progress reports and special reports were furnished to keep them current on all significant efforts and developments that occurred; staff consultation meetings were held at various stages to plan certain steps or resolve disagreements; and numerous other conversations, discussions, and meetings were held along the way. Dr. Williams of the Service testified that TVA had "always cooperated fully" and given the Service "any information" requested. In Mr. Greenwalt's October 12, 1976, letter to TVA, giving us the Service's biological opinion on the effects of Tellico on the snail darter, he stated that "your agency's cooperation in the consultation process on the Tellico Dam project has been appreciated." Indeed, even though TVA disagreed as to the biological desirability of the Service's plan to restock the Little Tennessee River with snail darters because the fish is unable to naturally sustain a population there, TVA assisted in those restocking operations. In short, we have consulted and cooperated with your Department in every reasonable way to conserve the snail darter short of scrapping the virtually completed Tellico project—a project which we have been directed repeatedly by Congress to complete in the public interest.

The basis given for your Solicitor's statement that TVA has not consulted is that TVA has been unwilling to discuss what he terms an "alternative" to Tellico which would allow preservation of the darter. The "alternative" suggested in the appendix to the TVA brief and in your letter to Mr. Seeber is a scenic river development which calls for the complete abandonment of

The Honorable Cecil D. Andrus

MAR 31 1978

the Tellico project and its major purposes of flood control, hydroelectric power, navigation, and employment opportunities, and for the waste of over \$50 million in publicly invested funds. The hydroelectric benefits cannot be denigrated by saying that they are small as compared to the whole of TVA, the Nation's largest power supplier. For example, Tellico would provide more electricity than was generated at several of TVA's dams (Chatuge, Nottely, South Holston, Watauga, Boone, Melton Hill, Tims Ford) in the year ending September 30, 1977. The Government, as well as other knowledgeable individuals and entities, is now recognizing that the country must utilize these renewable nonpolluting sources to help alleviate the increasingly acute energy problems. We simply do not think that the act contemplates the abandonment of a congressionally authorized project such as Tellico which was over three-quarters complete when the species was discovered and listed as endangered. Neither do we think that section 7 requires "consultation" about an "alternative" which requires scrapping the nearly completed project. As the district court expressly held:

Completion of the dam and impoundment of the river are integral parts of a project begun almost a decade ago. TVA has been moving toward this goal since ground was first broken. When the snail darter was listed on the endangered species list in November 1975, TVA was fairly close to completion of the project which has been consistently funded by Congress since 1966.

The nature of the project is such that there are no alternatives to impoundment of the reservoir, short of scrapping the entire project. Modifications or alterations to the project cannot be made at this time which will insure compliance with the Endangered Species Act. Requiring TVA to consult with other agencies about alternatives not reasonably available to it would be to require TVA to perform a useless gesture [Hill v. Tennessee Valley Authority, 419 F. Supp. 753, 758 (E.D. Tenn. 1976)].

Finally, we request that you consider the cavalier manner in which the Service handled TVA's petition to delist the Little Tennessee River as critical habitat for the snail darter. By letter dated February 28, 1977, we sent you a copy of TVA's petition to delist, the original of which was mailed the same day to the Director of the Service. Because of the importance of the matter to TVA and the region, we asked for an

The Honorable Cecil D. Andrus

MAR 31 1978

opportunity to meet with you and discuss the matter in some detail. Your April 18 reply, signed by Jim Joseph, suggested that a meeting be deferred until the petition had been thoroughly reviewed.

On December 5, 1977, over nine months after the filing of the petition to delist and after several TVA inquiries about the petition, we were informed by letter from the Associate Director of the Service that the petition had been denied. No consultation with TVA had occurred. No notice that the petition was being reviewed had been published in the Federal Register, and the December 5 letter gave no reasons for the denial. In fact, the letter stated that the petition had been indirectly denied as a part of the Service's July 6, 1977, denial of TVA's application for a permit to transplant snail darters. Yet, TVA was not informed of this until December 5, 1977, over five months after the decision was apparently made. Even then, there was a great deal of confusion in the Service about the status of the petition, as several Service staff members familiar with the petition informed TVA staff in late November that a decision had not as yet been made.

We feel that a matter of this importance should receive the thorough review suggested in your letter to us rather than being denied indirectly as a part of the denial of another separate matter. The petition was supported by detailed biological evidence which, as far as we know, is essentially undisputed; and we believe that if it receives a thorough, objective review it will be granted.

Again we want to emphasize our desire to work with the Service to conserve the snail darter. Through the combined effort of our organizations and through transplants of snail darters to other suitable rivers as contemplated by Public Law No. 95-96, we believe that a successful accommodation of both the project as now built and the snail darter can be achieved.

This letter reflects the views of myself and Director Jenkins; and Director Freeman will respond separately.

Sincerely yours,

Aubrey J. Wagner  
Chairman

cc: Mr. James T. McIntyre, Jr.  
Director  
Office of Management and Budget  
Executive Office Building  
Washington, D.C. 20503



Telefax

CALL  
LETTERSCHARGE  
TO 993-05-00KNOXVILLE  
MAR. 22, 1978

CECIL D. ANDRUS  
SECRETARY OF THE INTERIOR  
INTERIOR BUILDING  
WASHINGTON, DC 20240

WE RECEIVED ON MARCH 21, 1978, YOUR LETTER DATED MARCH 16 REQUESTING TVA REPRESENTATIVES TO MEET WITH YOUR STAFF AND OTHERS IN WASHINGTON ON MARCH 23. WHILE WE ARE AND ALWAYS HAVE BEEN VITALLY INTERESTED IN WORKING WITH YOUR STAFF TO RESOLVE THE TELlico/SNAIL DARTER CONFLICT, IT IS IMPOSSIBLE FOR US TO MEET IN WASHINGTON ON SUCH SHORT NOTICE, PARTICULARLY JUST BEFORE THE EASTER WEEKEND. WE ARE ANXIOUS, HOWEVER, TO MEET AT A LATER DATE

SENDING BLANK

*Send the above message, subject to terms on back hereof, which are hereby agreed to*

PLEASE TYPE OR WRITE PLAINLY WITHIN BORDER-DO NOT FOLD  
WU 1269 (R9/69)



Telefax

CALL  
LETTERSCHARGE  
TO 993-05-00KNOXVILLE  
MAR. 22, 1978

AND WILL BE IN TOUCH TO ARRANGE SUCH A MEETING.

ORIGINAL TO ANDRUS, COPIES TO THE FOLLOWING:

DIRECTOR, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC  
CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY, WASHINGTON, DC  
OFFICE OF THE ATTORNEY GENERAL, WASHINGTON, DC  
OFFICE OF THE SOLICITOR GENERAL, WASHINGTON, DC  
COMPTROLLER GENERAL, WASHINGTON, DC

LYNN SEEBER  
TENNESSEE VALLEY AUTHORITY

SENDING BLANK

*Send the above message, subject to terms on back hereof, which are hereby agreed to*

PLEASE TYPE OR WRITE PLAINLY WITHIN BORDER-DO NOT FOLD  
WU 1269 (R9/69)

## COPIES OF TELEGRAM TO THE FOLLOWING:

JAMES T. McINTYRE, JR.  
DIRECTOR  
OFFICE OF MANAGEMENT AND BUDGET  
EXECUTIVE OFFICE BUILDING  
WASHINGTON, DC 20503

CHARLES H. WARREN, CHAIRMAN  
COUNCIL ON ENVIRONMENTAL QUALITY  
722 JACKSON PLACE  
WASHINGTON, DC 20006

OFFICE OF THE ATTORNEY GENERAL  
DEPARTMENT OF JUSTICE  
WASHINGTON, DC 20530

OFFICE OF THE SOLICITOR GENERAL  
DEPARTMENT OF JUSTICE  
WASHINGTON, DC 20530

ELMER B. STAATS  
COMPTROLLER GENERAL  
GENERAL ACCOUNTING OFFICE BUILDING  
WASHINGTON, DC 20548



# United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

MAR 16 1978

Mr. Lynn Seeber  
General Manager  
Tennessee Valley Authority  
Knoxville, Tennessee 37902

Dear Mr. Seeber:

This is to request that the Tennessee Valley Authority reinitiate consultation under Section 7 of the Endangered Species Act of 1973 with respect to the Tellico Reservoir Project. \*/ The purpose of such consultation would be to obtain current information on the status of the species and TVA's activities and an opinion of the Fish and Wildlife Service as to the impacts upon the snail darter and its critical habitat of undertaking the Tellico Project modifications referred to in GAO Report EMD-77-58. \*\*/ The principal alternative envisioned by the Comptroller General--which would require the removal of a portion of the dam and the conversion of Tellico from a reservoir project to a free-flowing river-based agricultural, economic, recreational, and cultural development project--is one which has the potential of preserving the snail darter and its critical habitat while yielding a higher economic return than a reservoir project. This alternative has not been the subject of prior consultations under Section 7 of the Endangered Species Act.

---

\*/ This procedure is specified at 50 C.F.R. 5.402.04(h) (1) [43 Fed. Reg. 876 (January 4, 1978)]

\*\*/ Comptroller General of the United States, The Tennessee Valley Authority's Tellico Dam Project -- Costs, Alternatives, and Benefits, No. EMD-77-58 (October 14, 1977)



We further recommend that you promptly undertake the remaining cost and remaining benefit analysis of the Tellico Project and its alternatives which the Comptroller General recommended that you submit to the Congress. This Department is prepared to provide you its initial suggestions on the development of the alternatives, as well as to comment upon the methodologies, data bases, and resulting analyses used in the study. Only in this way can informed decisions be made on the full range of available alternatives for preserving the snail darter and recouping the investment in the affected portion of the Little Tennessee Valley.

We urgently recommend the completion of the recommended study and of Section 7 consultation. For reasons stated in the GAO Report, the Congress, the Executive, and the Supreme Court do not have a true account of the present merits of alternatives to the Tellico Reservoir Project. Furthermore, during the extended period of time it will take to prove the success or failure of snail darter transplant efforts, the present dam structure may be contributing to the demise of the population of snail darters in the Little Tennessee River. The sooner this study and further Section 7 consultation can be concluded, the sooner informed decisions can be made as to whether project economics justify the closing of the dam gates and a conscious extirpation of a species, either now, or at some point in the future when transplant success can be evaluated, or at all. In view of GAO's projections of comparatively greater economic benefits to be derived from alternatives (which would also promote darter preservation), the public interest demands that this evaluation be undertaken at this time.

I am providing the Director of the Office and Management and Budget and the Chairman of the Council on Environmental Quality a copy of this letter, in part because of the Comptroller General's recommendation that they participate in the recommended cost-benefit study. I would suggest that appropriate staff of our four offices, together with representatives of the General Accounting Office, meet at OMB on March 23, 1978, to commence formulation of the cost-benefit study.

Sincerely,

  
 Cecil D. Andrews  
 SECRETARY

cc: Director, OMB  
 Chairman, CEQ  
 Attorney General  
 Solicitor  
 Comptroller General  
 A/S - FWP  
 Associate Sol., C&W

Dir., FWS  
 Mr. William L. Jenkins  
 Mr. S. David Freeman  
 Mr. Aubrey J. Wagner

Mr. DINGELL. The committee will stand in recess until 2.

[Whereupon, at 1 p.m. the subcommittee recessed, to reconvene at 2 p.m. the same day.]

#### AFTERNOON SESSION

Mr. LEGGETT. The meeting of the subcommittee will please come back to order.

At this point I am pleased to welcome a manager of the U.S. Chamber of Commerce, Mr. John Robinson, manager of the Resources and Environmental Quality Division.

Mr. Robinson, it is very nice to have you before the subcommittee. I understand you have a movie you want to show.

#### STATEMENT OF JOHN ROBINSON, MANAGER, RESOURCES AND ENVIRONMENTAL QUALITY DIVISION, U.S. CHAMBER OF COMMERCE

Mr. ROBINSON. Mr. Chairman, we do. With your permission, we would like to submit our formal remarks for the record.

Mr. LEGGETT. Your formal remarks will be included in the record.

[The information follows:]

#### STATEMENT OF JOHN K. ROBINSON FOR THE CHAMBER OF COMMERCE OF THE UNITED STATES

I am John K. Robinson, Manager of the Resources and Environmental Quality Division, Chamber of Commerce of the United States.

The National Chamber is the largest federation of business and professional organizations in the country. It represents more than 3,700 trade and professional associations and chambers of commerce and has a direct membership of over 70,000 business firms.

The Chamber is pleased to have the opportunity to testify on the oversight of the Endangered Species Act of 1973. We recognize the need to insure survival of both threatened and endangered species. Protection of our vanishing flora and fauna is an important endeavor, worthy of the attention it has been given by Congress and this Committee.

The Congress now has the opportunity to make the Act more workable. To this end, the Chamber offers one basic suggestion. Due to the legal problems in connection with the Act, legislative amendment is needed at this time. Merely changing the administrative procedures that have been operative until now will not remedy the definitional, legal, and consultational problems that have surfaced in the Act. A deficiency is that the Act contains no mechanism for balancing economic and social welfare concerns against environmental ones.

#### DEFINITION OF TERMS

It is apparent that several key terms used in the Act need better and more precise definition. In particular, Congress should give further guidance as to the meaning of the terms "species," "range," "significant," "portion of range," "habitat," "critical habitat," "endangered," and "recovery." Variations in the interpretation of these key terms have limited the effectiveness of the Act and caused uncertainty on the part of business and federal program managers who have been faced with endangered species problems. To avoid unnecessary litigation and delay, clarification of these terms must be provided.

There is particular question as to what was intended by the term "endangered species." The term is defined by the Act to mean "any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the class Insecta determined by the Secretary \* \* \*." Neither this nor the report specifies whether a strict biological interpretation of the Act should apply. In other words, is it fair to classify all 116 types of darters as separate species as the Fish and Wildlife Service has done? How far down the line did Congress intend for the definition to go? Should naturally occurring mutations caused by elements, light

and mineral changes, and effluents such as pollution be considered separate species under the Act?

Especially necessary is a stricter definition of "critical habitat." Critical habitat is defined in the *Endangered Species Technical Bulletin* of August, 1976, as that area of land, water and airspace required for the normal needs and survival of a species. Even though "needs" is strictly defined, the issue of "buffer zones" surrounding a critical habitat area becomes a significant one. This issue is of primary concern to business and is addressed nowhere in the Act. Critical habitat must be defined as precisely as possible in order to define the buffer zones surrounding those areas.

Similarly, the types of activities, if any, that can ensue in a critical habitat area must be specified. We recognize that permissible activities in a critical habitat need not be singular. There may be many kinds of activity which could be carried out within the critical habitat of a species that would not be expected to result in a reduction in its numbers or distribution or to otherwise adversely affect the species. However, there is no definition of what constitutes a permissible action in an area designated as critical habitat. Without such definition, the result will be continued confusion and unequal application of the concept.

#### FEDERAL COMPLIANCE PROBLEMS AND SECTION 7

By prohibiting any federal agency from making any modification which would be detrimental to a given species in any area designated as critical habitat, Section 7 becomes the Act's sharpest cutting edge. It makes the act so inflexible that misuse is not only possible, but very probable. The Act provides no consideration of the construction status of a project, its prior Congressional approval, its social and economic necessity and/or the strength of local opinion.

Language has been offered in both the House and Senate, in another but similar legislative area, which would help avoid problems of federal agency compliance with the Endangered Species Act. The language reads:

"No agency of the United States shall take any action or assist any undertaking by loan, grant, license, permit or other action which would adversely affect or destroy the element \* \* \* of natural diversity \* \* \* unless after public hearing the head of such agency determines there is *no prudent or feasible alternative* to such action, adverse impact or destruction. If no feasible and prudent alternative is identified and adopted, the department or agency shall, *in consultation with the relevant state*, or Federal agency managing the Reserve, and the Secretary: (1) take \* \* \* reasonable and appropriate actions which the department or agency determines will acceptably minimize the adverse impact on the reserve; or (2) provide \* \* \* sufficient funds to acquire *from a willing seller*, \* \* \* which contain high quality components of the same elements of natural diversity which are to be disrupted or destroyed by the proposed action.

In the case of Federal construction projects, this subsection shall apply only to projects which have not been authorized by Congress prior to enactment of this Act." (Emphasis added.)

Such language would avoid problems such as those that arose in the Tellico Dam and Mississippi Interstate Ten cases which went to the Supreme Court. The Chamber proposes to the Committee that comparable language be placed in Section 7 of the Endangered Species Act.

#### BALANCING MECHANISM

One of our most important concerns is that the Endangered Species Act has no mechanism for balancing the risks against the benefits and the economics against the aesthetics of a project or action which is proposed for a critical habitat area. One way to balance the risks and benefits and the economics and aesthetics is through an environmental impact statement, as required by the National Environmental Policy Act (NEPA), to be filed by the Department of the Interior prior to designation of a critical habitat.

NEPA is a full disclosure law designed to inform the Congress, the public, and the decision-makers of the environmental consequences of agency actions. Moreover, NEPA forces the agency initiating the action to consider alternatives to the action proposed. Consultation with the public is required. If the Environmental Impact Statement process were required under the Endangered Species Act, the net effect would be better informed decision-making.

#### ENDANGERED SPECIES ACT AND NO-GROWTH PROPONENTS

The Interior Department claims that there has been only one major consultation problem with the Endangered Species Act thus far, that being the Tellico Dam situation. Recently, at least one half dozen other cases have come to our attention. I

shall point out a few. Construction in all cases is presently being delayed because of consultation problems between landowners or builders and the Fish and Wildlife Service concerning the designation and definition of critical habitat.

In Birmingham, Alabama, construction of two major housing/commercial developments and expansion of a waste-water treatment plant on the Cahaba River is being delayed pending possible placement of two two-inch minnows on the Endangered Species list. Two prominent ichthyologists from the University of Alabama investigating the Fish and Wildlife Service's proposed endangered species designation have found one of the specified fish to be quite common throughout the river. The other, however, may not even exist as it has not been seen in over ten years. Furthermore, the Interior Department admits that neither fish has any discernible commercial, sporting, educational, or scientific value. Their only unique feature is their local names.

Such a designation by the Fish and Wildlife Service will freeze the Cahaba Wastewater Treatment Plant at its present capacity requiring a no-growth policy for the area. Hearings on the matter were held in mid-March in Birmingham, and the Fish and Wildlife Service has yet to make a decision. Until a decision is made, growth is indefinitely delayed. If the sewage treatment plant is not allowed to expand, the impact on the Cahaba basin between now and 1980 will be a loss of \$220 million in construction and a loss of 7,000 permanent jobs. Essentially, the future growth and development of the Birmingham area around the Cahaba River basin rests entirely on a decision concerning two kinds of minnows of no admitted value.

Opponents of growth on the Cahaba River initially attempted to have the Environmental Protection Agency (EPA) declare that the river was too polluted to tolerate further effluent discharges. EPA found, however, that the Cahaba was capable of accepting additional effluent without significant impact on either water quality or public health. Next, these same no-growth groups attempted to have the river listed as wild and scenic. This failed because the river passes through Birmingham proper. Now they are using the provisions of the Endangered Species Act. Should this ploy fail, recent information indicates that the no-growth groups are searching diligently for historic sites for preservation along the river. Thus, it becomes obvious that the Endangered Species Act is being used merely as a step by environmentalists in the process of limiting the growth and development of the area.

Similar problems exist with the Dickey-Lincoln Power Plant in Maine and the Tennessee-Tombigbee Waterway in Alabama and Mississippi. Both are Army Corps of Engineers projects and are being delayed by various environmental groups attempting to use the Endangered Species Act in order to protect the affected areas. As with the Birmingham case, they are attempting to use the Act to limit the area's growth and development.

The Dickey-Lincoln Power Plant on the St. John's River in Maine has been authorized since 1965 under the Flood Control Act. Since then, almost \$10 billion has been spent on planning and studies alone. Construction has been delayed, to date, largely because of a snapdragon-like flower, the "furbish lousewort," called rare and endangered by environmentalists. Even though the furbish lousewort was not placed on the Endangered Species list until April of *this year*, environmentalists succeeded in having the project delayed on the basis that further studies were needed.

Interestingly, all three studies completed to date have produced results contrary to the environmentalists' case. They first uncovered the fact that the flower in question is prevalent in other regions—especially in Canada. The second study revealed that the furbish lousewort can be transplanted successfully. The third study showed that it can be grown from seed. And yet, in spite of the findings of the studies and billions of planning dollars spent, the environmentalists continue to wage and win the battle of placing the lousewort on the Endangered Species list and delaying, or possibly halting, the project.

Concerning this and other projects, it is important to ask whether it is necessary to do study after study, each having the same implications. Ought not there be some mechanism for doing a definitive study and/or limiting the time frame in which numerous studies can be undertaken? To let the process continue endlessly is a waste of time, energy and resources. Further, to allow environmentalists to delay a project in the hope of eventually classifying an affected species as rare and endangered appears contrary to the intent of the law.

The Tennessee-Tombigbee Waterway is a 9 stage lock and dam system extending over two states and flowing to the Gulf of Mexico. Curiously enough, the project has been discussed in Congress for over 100 years, and was finally authorized in 1946.

Funding came through in 1970. To date, the project is about 20 percent complete and over \$2.8 million has been spent.

In 1971, the Fifth Circuit Court of Appeals upheld a lower court's decision against the environmentalists, affirming the project's worth and allowing for its continuation. In 1976, a new suit was filed claiming that the Army Corps of Engineers deviated from its original proposal. Environmentalists are now attempting to use the Endangered Species Act to halt the project. These same groups have alleged that if this judicial attempt fails, they will try to use the yet to be listed and so-called "endangered" mollusks, darter and turtle to terminate the project.

Even more ludicrous is a situation in Houston. There, construction of multi-million dollar, much-needed housing projects is being frustrated by the proposed listing of a toad that no one has seen or heard in the five specified areas in over ten years. Biologists tell us that the Houston Toad is a very promiscuous creature. Should it exist at all, it probably does as a hybrid of the locally popular Gulf Toad. In addition to designating areas where housing is being constructed as critical habitats for the Houston Toad, the Interior Department classified a completely asphalted parking lot. It is important to point out that a first study on these critical habitats was set aside by the Fish and Wildlife Service because of error. A second was deemed inconclusive, and a third is now underway. While the Fish and Wildlife Service takes its time making a decision on the Houston Toad case, construction on five sites has been halted. Landowners can neither develop nor sell their properties. They are wary of committing their funds for fear of being unable to get use permits and government loans for completed projects. The studies continue and the property owners are helpless.

The film you're about to see is an unedited, unrevised segment from NBC's monthly "Weekend" show. It illustrates the absurdity of the Houston Toad situation as well as the absurdity of the entire consultation process which has been established under the Endangered Species Act.

#### RECOMMENDATIONS

Four basic changes must be made in the Endangered Species Act of 1973. (1) Definitions in the Act must be made more precise. (2) Balancing mechanisms, such as an environmental impact statement and public hearings must be required. (3) Easement of the federal agency compliance provision must be made to allow for completion of already commenced, funded, and Congressionally-approved projects. (4) The consultation process by which critical habitats are designated must be tightened and subjected to public scrutiny.

To avoid situations like that in Birmingham, Fish and Wildlife Service decisions must be made in a timely manner. After a public hearing has been held, an adequate but limited amount of time should be established for the Fish and Wildlife Service to make a decision. Development of an area should not be delayed indefinitely.

The Dickey-Lincoln and Tennessee-Tombigbee cases also could be solved easily by amendment to the Act. The harassment tactic, used by environmentalists against developers, of continuously coming up with new, possibly endangered species should not be permitted.

So, too, in all of the cases mentioned, particularly the Houston Toad, legislative remedies are possible. In addition to making a timely decision based on accurate scientific data, the Fish and Wildlife Service should be required to undertake and complete studies within a limited amount of time. If the third study is inconclusive, can the Interior Department undertake a fourth and fifth and so on until the property owner is forced to let the land go for taxes? The Endangered Species Act presently places no limit on this kind of wasteful and time consuming anti-property owner activity by the Interior Department.

#### CONCLUSION

Especially in light of both the Supreme Court's recent decision to keep the multi-million dollar Tellico Dam unused and the public support for California's Proposition 13, the time is right for the Congress to closely examine The Endangered Species Act of 1973. More precise definitions, guidelines for better administration, and concrete mechanisms for balancing environmental and economic concerns will help to alleviate consultational disputes, setting the stage for rational decision making and less waste of taxpayers' dollars.

Mr. ROBINSON. We would like to summarize those very briefly, and point out a few details for you. After viewing the film we can discuss any questions that the subcommittee might have.

Mr. LEGGETT. How long does your film take?

Mr. ROBINSON. It should be about 11 minutes.

Mr. LEGGETT. Let's start the 11 minutes.

Mr. ROBINSON. OK, Mr. Chairman.

In the Endangered Species Act we see some problems that deal principally with definition. In our formal testimony we specify some areas that need to be further defined. We wonder if the Endangered Species Act is not trying to accomplish some things that we haven't been able to since the evolution of man; protect all species from extinction.

We also think that the Federal agency compliance language could be modified; providing the opportunity to various agencies, particularly at the Secretary level, to make some determination other than for the species, to decide whether or not a project needs to proceed.

Had we had this type of language in the Endangered Species Act when it was written originally, I do not think that we would have nearly the problems that we have today.

Principally, we are concerned with the fact that the various agencies involved have made a big point out of the consultation processes. I think the film that you are going to see shows the consultation process as something other than an accurate process. It also shows the way this act is being administered, specie-specific, and without any determination for the human concerns involved here.

I would like to let you see the film and then we might discuss a little further any questions that you might have.

Mr. LEGGETT. Fine. Go ahead and roll.

Mr. ROBINSON. I might point out before the film is shown that it was produced for NBC Weekend. It was aired for the first time in this country about January of this year.

[Film presentation.]

Mr. ROBINSON. Mr. Chairman, that is the end of the film.

I think there were some key words there, that deal only with the biology of the species—I think you saw that very plainly. The human, economical and political concerns couldn't be dealt with, and the Government does not buy critical habitat land. Long before development began in Houston, the Houston toad had been "involved" with the Gulf toad. This is exactly the type of administration of this act that concerns us very much. It is that sort of rigidity that the Supreme Court addressed in the Tellico decision last week.

Mr. LEGGETT. It is that type of rigidity that this subcommittee is concerned with, too, and certainly we have to be cognizant of that. We intended that all legislation enacted by this Congress be administered with good sense. Sometimes it is so structured that there are problems with it, and I don't think any reasonable person would suggest that a few stray toads that are not readily identifiable should abort the development of an entire area.

This is very similar to the Tellico issue. What we are trying to do is develop some tests that will allow for some discretion and also to insure to allow for survival of all species, including man.

It is very interesting that, apparently with the full support of the Federal Government, you can develop an 11-minute movie, which

some people think is really fun on the Federal Government, and other people don't see anything funny about it at all.

Mr. ROBINSON. We don't see anything terribly funny about it. We will make a videotape available to you for your committee records and so you may show it to others.

Mr. LEGGETT. I think it is a riot. I would expect you to take that around to chamber groups.

Mr. ROBINSON. Needless to say, we have, sir.

Mr. LEGGETT. I guess if Proposition 13 were ever enacted at the Federal level we know where they are going to strike first..

Mr. Forsythe?

Mr. FORSYTHE. Thank you, Mr. Chairman.

Thank you, Mr. Robinson. Basically, your concerns go to providing that there must be input other than just agency input. In other words, a city, in fact, should be able to have input; there should be a hearing process involved beyond the interagency consultation that is now provided.

Mr. ROBINSON. That is correct, sir.

Mr. FORSYTHE. You, along with, I guess, everybody else, believe that this kind of legislation is very important, and that basically we would need to have concern for species that have some value? I don't think we can say that we want to limit the term value to mean only those that are economically valuable \* \* \* to only those that are valuable for any specific reason. I think we have to be rather open on that point. We must not get so rigid, as the chairman says, that the end result becomes similar to that peculiar situation in Houston.

Has the critical habitat area been declared?

Mr. ROBINSON. They removed the parking lot; it was decided that wouldn't work very well. It is still in the process of being determined at this time and development has stopped cold.

Mr. FORSYTHE. The toad itself has been listed as an endangered species?

Mr. ROBINSON. The toad has, but nobody has seen one. That is the problem.

Mr. FORSYTHE. Not even in these other areas?

Mr. ROBINSON. In the other areas, but not in the Harris County area.

Mr. FORSYTHE. I think that is important too, and it is a question that does concern me. Do we have to try and protect habitat over a whole range where a species has already been eliminated? We don't know that the toad exists in Houston but we are trying to protect possible populations when the same species is known to exist elsewhere. This certainly seems to border on being ridiculous. That is not an easy situation to resolve but we may not, in fact, protect the species if we try to start setting aside critical habitat in an area where we don't even know that they exist.

Mr. ROBINSON. I am not a biologist, really, although I majored in that subject in college many, many more years ago than I want to think about.

It seems to me in Harris County that they have a little problem with definition of the real species, but in the other areas they don't. It would make more sense to preserve the species in the area

where it is still pure than it would be to preserve a hybrid in Harris County.

Mr. FORSYTHE. Of course, until you could find them, you can hardly tell whether it is a hybrid species. The film mentioned that private activities were impacted. Do you want to enlarge on that?

Mr. ROBINSON. I didn't understand your question.

Mr. FORSYTHE. The private activities are impacted. This is not just a dam that is being built by the Federal Government?

Mr. ROBINSON. No, sir; this is development of housing for the people of Houston by a private developer by the name of Wolf, mentioned in this particular film. It is, however, happening to a number of developers, including a corporation that is a subsidiary of another company. They have been essentially stopped from continuing to develop this housing project, tentatively identified as critical habitat, until the final determination.

Mr. FORSYTHE. The hook that that comes in on is that there are Federal loan guarantees and Federal mortgages and those kinds of things that bring the act in, because that is the Federal involvement in the activity?

Mr. ROBINSON. That is correct.

Mr. FORSYTHE. If there were no Federal money or Federal program involved, as I understand it the act does not extend to private activity?

Mr. ROBINSON. You have asked me a question I can't answer. I will be glad to try to answer it for the committee and furnish it at a later time. But, I can't answer it right off the top of my head because I haven't delved into that part of it.

Mr. FORSYTHE. I am not sure whether you were involved, but I am involved in another piece of legislation that has been attacked as has the Endangered Species Act. It brought forth the ire of the chamber. It was the nongame bill.

Mr. ROBINSON. Yes, sir.

Mr. FORSYTHE. Quite frankly, I am concerned that a relationship has developed here which is almost the total reverse of the fact. In the nongame bill we sought to protect some of these nongame species before they become endangered—and I don't mean by land acquisition or Federal land use planning but by management—in that way, we perhaps could avoid some of the problems that we are facing in the Endangered Species Act.

I don't know whether you want to comment on that.

Mr. ROBINSON. I will be more than happy to comment on your comments concerning the nongame fish and wildlife bill. I hate to tie up a lot of time on this, but I will be glad to talk to you privately about it.

Mr. LEGGETT. We would appreciate your doing that privately.

Mr. ROBINSON. If you would prefer that I do that, Mr. Chairman, I will be more than happy to do it.

Mr. LEGGETT. I think that would be preferable.

Let me ask you this: Was the habitat for this Houston toad ever designated?

Mr. ROBINSON. No; it hasn't been yet.

Mr. LEGGETT. It is still pending. What precludes your people from building then at the present time?



Mr. ROBINSON. It simply means that they can't operate in an area that has been designated as a possible critical habitat area. That is where the consultation process becomes a critical part of this act, as I understand it.

Mr. LEGGETT. Counsel tells me that that is not true. I suspect that maybe builders don't want to build in an area that possibly may be designated because you could get yourself into a Tellico posture where you built and you can't get financing.

Mr. ROBINSON. I don't mean to intimate that they are precluded by law from doing it. I think they are precluded by decent and sensible business practice from going ahead until some determination is made. Capital formation is one of the biggest problems industry now faces and that would be a silly expenditure of money if all of a sudden you couldn't move. We don't want to have a building development and then find that nothing else can be done there.

Mr. LEGGETT. Counsel tells me that, apparently the specie has been listed. Do you know whether or not a hearing was requested down there?

Mr. ROBINSON. No, sir, I do not.

Mr. LEGGETT. Of course, they are going through the process. When did they start the listing of this area as critical habitat?

Mr. ROBINSON. It is my understanding this began approximately 2 years ago.

Mr. LEGGETT. And the land has been paralyzed every since?

Mr. ROBINSON. That is correct.

Mr. LEGGETT. I think species listed as endangered ought to be substantial rather than just any. Obviously, we don't want to open up any holes in this law that a train can run through; but, on the other hand, I think we have to be reasonable.

Mr. ROBINSON. Right now a gnat can't run through it, sir.

Mr. LEGGETT. Under proper management, it would seem to me that if there are only enough toads in this area to be seen occasionally during the mating season, the Department of the Interior ought to be gathering those, because obviously Houston is going to be moving ahead. At least they could get some idea where they are going; but, again, that is an alternative that we will explore with the Department of the Interior.

Mr. ROBINSON. Thank you, sir.

Mr. LEGGETT. Counsel, let's address a proper letter on that and get an analysis of what they are doing.

Thank you very much.

Mr. ROBINSON. Thank you.

Mr. LEGGETT. Now we have Mr. Brown, deputy director of the American Public Power Association.

#### STATEMENT OF J. D. BROWN, DEPUTY EXECUTIVE DIRECTOR, AMERICAN PUBLIC POWER ASSOCIATION

Mr. BROWN. Thank you, Mr. Chairman.

Mr. LEGGETT. Do you have a statement?

Mr. BROWN. Yes, I do. I would like to submit it to the committee.

Mr. LEGGETT. The statement will be included in the record.

[The information follows:]

**STATEMENT OF J. D. BROWN, DEPUTY EXECUTIVE DIRECTOR, AMERICAN PUBLIC  
POWER ASSOCIATION**

My name is J. D. Brown. I am Deputy Executive Director of the American Public Power Association, a national service organization representing more than 1,400 local publicly owned electric utility systems in 48 states, American Samoa, Guam, Puerto Rico, and the Virgin Islands. We are pleased to have this opportunity to participate in the Subcommittee's oversight hearings on the Endangered Species Act of 1973.

Members of this Association have an interest in these hearings because a number of them purchase electric power at wholesale from public agencies or private parties which build and operate generating and transmitting facilities affected by the Endangered Species Act, while others have built and will build their own power generating and transmission facilities under Federal licenses. The provisions of the Endangered Species Act, then, are of great potential concern to these local publicly owned electric utilities because of their possible effect on construction of power facilities to meet consumer needs.

APPA supports the Act's purpose, to preserve species in danger of extinction. We are concerned about the inflexibility of provisions of the Act, and the fact that it can be used to stop Federal projects, Federally assisted projects, or projects requiring Federal licenses or permits, regardless of their merit and relationship to the country's energy needs.

We believe the Act should be amended to permit a balancing of the value of protecting various subspecies and their critical habitats against the value of protecting and promoting the quality of life of the people of the nation, including meeting national energy requirements.

As passed in 1973, the Endangered Species Act established a national policy to conserve endangered or threatened species of fish, wildlife and plants. The Secretary of the Interior and Secretary of Commerce are responsible for determining which species are endangered or threatened. The Secretaries are to make their determination on the basis of the "best scientific and commercial data available." Interested persons can petition the Secretary to add species to the endangered or threatened list. An endangered species is defined as a species in danger of extinction throughout all or a significant portion of its range. A threatened species is any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Thus, a species which is safe in one geographical area, but is endangered in another area, must be protected in the endangered area. The Secretary determines whether any species is endangered or threatened on the basis of the following: habitat destruction, overutilization; disease; inadequacy of existing regulatory mechanism; or other factors affecting its continued existence.

Section 7 of the act directs each Federal agency to insure that its actions do not jeopardize the existence of endangered or threatened species or result in the destruction or modification of their habitats. The recent Supreme Court decision in *TVA vs. Hill* has resolved whatever doubt there might have been that this section is an absolute prohibition of Federal actions resulting in the destruction or modification of the habitat of endangered or threatened species.

**BACKGROUND**

The Endangered Species Act is an outgrowth of the Endangered Species Preservation Act, P.L. 89-699, passed in 1966, and the Endangered Species Conservation Act, P.L. 91-135 passed in 1969. Both of these Acts originated out of concern for importation and selling of fish and wildlife that were found to be threatened with extinction.

The Merchant Marine and Fisheries Committee Report on the 1973 Act, House Report 93-412, noted that hearings on the Endangered Species Act were held "on the heels of an international meeting," which was mandated by earlier endangered species legislation for the purpose of developing effective international controls on the unrestricted trade of endangered species. The report does not indicate specific concern over the value of obscure subspecies.

The potential magnitude of the endangered list was not discussed in the report, and probably not anticipated by the Congress in 1973. The report noted there were 100 species of fish and wildlife in the United States threatened with extinction, and 375 species of animals threatened with extinction throughout the world. Those numbers contrast sharply with the numbers of species listed today, and the growing potential for additions. As of May 31, there were 676 plants and animals on the endangered and threatened species list. Currently, close to 2,000 plants and animals are being reviewed for possible inclusion. Additionally, critical habitat determina-

tions have been made for 28 species, and proposals have been published in the Federal Register for 41 more.

While several versions of the 1973 House measure, including the Administration's bill, did not require absolute protection of all threatened and endangered species and their habitats, these qualifiers were removed from the bill as finally adopted by the House. The Senate, however, did not place an absolute prohibition on Federal actions likely to result in the modification of habitats or destruction of species. In conference, the mandatory language of the House bill was adopted.

#### POTENTIAL IMPACT

In addition to the endangered species contemplated by the Congress when the Act was passed, there is a possibility that an additional 200,000 species might qualify for the endangered or threatened list, and could therefore stop a project. According to Keith Schreiner, Associate Director, U.S. Fish and Wildlife Service, "The Act covers every animal and plant species, subspecies, and population in the world needing protection. There are approximately 1.4 million full species of animals and 600,000 full species of plants in the world. Various authorities calculate as many as 10 percent of them—some 200,000—may need to be listed as endangered or threatened. When one counts in subspecies, not to mention individual populations, the total could increase to three to five times that number."

It is now obvious that the endangered species list will grow each year. More than 10,000 new species are being discovered and described each year, and the difference between species is often slight and only recognizable by persons specifically trained in a particular field.

Section 7 of the Act provides that Federal agencies shall, after consultation with the Secretary of the Interior, utilize their authorities in furtherance of the Act. Since 1973, there have been approximately 4,500 consultations between the Fish and Wildlife Service, the Interior Secretary's designee, and various Federal agencies concerning potential conflicts between proposed projects and the limited number of species and habitats currently listed. Given the unyielding nature of the Act, these consultations do not involve a weighing of factors but rather concentrate on project alternatives. In the absence of alternatives which are not detrimental to listed species, the projects may not go forward.

The Fish and Wildlife Service expects to undertake 20,000 consultations during FY 1979 alone, more than four times the number conducted in the previous five years. As the number of Federal permits and licenses increases, and as more and more species and subspecies are identified and listed, more and more consultations will be required in the years to come. The administrative magnitude of this problem is great.

#### CURRENT PROJECTS THREATENED

Several projects have been stopped or could be stopped by species on the endangered list. Species threatening the projects range from a type of snail darter to a wild snapdragon.

The projects and endangered species involved include the following: Tellico Dam in Tennessee/the snail darter; Columbia Dam in Tennessee/Bird-wing Pearly Mussel; Narrows Reservoir in Nebraska/whooping crane; Dickey-Lincoln School Lakes Project in Maine/furbish lousewort; Miami Jet Port/Everglades Kites; Vandenberg Space Shuttle Launch in California/brown pelican; Glen Canyon Dam in Colorado/humpbacked chub and Colorado River squaw fish; and New Melones Dam in California/malones harvester spider.

The most celebrated case of a project being stopped because of an endangered species is that of TVA's Tellico Dam project in Tennessee, which, when more than 80 percent complete, was stopped because of the three-inch endangered fish, the snail darter. The project was started in 1967; the dam is fully completed, but the gates have not been closed and access roads have not been constructed. More than \$107 million has been expended. Benefits from the project include a flood control storage space to help protect downstream communities; production of 200 million kilowatt hours of electricity annually; and the creation of a navigational channel to allow commercial and industrial development.

The Supreme Court decision re Tellico this month is a clear message concerning the inflexibility of the Endangered Species Act. When the Act is used to stop Federal projects, it decisively subverts Congressional decisions—decisions to authorize and fund projects based on comprehensive review and a balancing of factors rather than on the single criterion of whether an endangered species might be threatened. This offers opponents of projects who have lost their case through the legislative process another chance to stop a project. The legislative procedure in-

volves a long hearing process, subcommittee and committee deliberation, and floor debate in both houses. And yet, after these deliberations, a project can be prevented from being developed because of the discovery of a snail darter. Identification and listing of new species, and additional requirements for Federal permits and licenses, present further opportunities for frustrating Congressional actions.

The Tellico Dam project is again a case in point. Opponents of that project who seized on the Endangered Species Act as a weapon to prevent its completion have indicated that project termination for reasons other than preservation of the snail darter was their primary objective.

The lack of balance and lack of opportunity to compromise could well have an unfavorable backlash on the Act itself. An article by Lance D. Wood in the *Federal Bar Journal*, Winter, 1978, notes that "if strict enforcement of Section 7 results in very many impasses similar to Tellico, the adverse public and Congressional reaction could retard all efforts to preserve wildlife and environmental quality and may provoke Congress to eviscerate the Endangered Species Act."

#### GENERAL CONCEPTS FOR AMENDING THE ACT

The Act should be amended without emasculating its desired effectiveness. Essential modifications include more precise definition of terms; a mechanism to balance the value of the project against the value of the species; and a clause that would exempt from requirements of the Act those projects that were underway before enactment of the Endangered Species Act of 1973.

First, the terms "species," "subspecies," and "habitat," need more precise definitions. Such precision will help in the interpretation of the Act and will provide more direction to the Fish and Wildlife Service. Sponsors of projects will know at the outset the boundaries under which they are operating and what barriers to expect. For example, the amount of diversity within a particular species and subspecies which is to be protected should be defined. The term subspecies is used in the definition for species, but is not defined. In Section 4 of the Act, the word modification should be qualified to mean adverse modification. Presently, modification of the habitat in any manner is not allowed, even if the modification is to the advantage of the threatened species. Such refining will allow the Administrator of Fish and Wildlife to focus on the exact intent of the Act.

Second, criteria should be established to determine whether the social, economic, or public interest benefits of a project outweigh the requirement of the law to preserve a certain species. The impact of the project on employment, energy supply, productivity, and quality of life should be examined. Examples of such balancing are found in numerous other Federal environmental laws, such as the Resource Conservation and Recovery Act of 1976. The guidelines in the Act for solid waste management programs provide for a balance of technical and economic costs and the protection of health and environment. A further illustration is the Wild and Scenic Rivers Act which authorizes studies of potential additions to the national wild and scenic rivers system. The studies must examine the "reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed or curtailed" if the area were included in the national wild and scenic rivers system. Another example of balancing is found in President Carter's Water Policy Program standards for new projects, which require consideration of economic development and environmental quality.

The findings of the 1973 Act might be used as a starting point for modification. In 1973, the Congress declared that certain species of fish, wildlife and plants are in danger of or threatened with extinction, and these species "are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people . . ." These factors—as well as economic and social impact—could be utilized to determine when priority should be given to preservation as opposed to development. Rational decisions could then be made to determine whether an extraordinary effort by the Federal government through expenditures of public funds to preserve all species should be demanded.

Third, there should be an amendment to exempt those projects which were under construction or in existence before the Endangered Species Act was enacted.

In fact, proposed regulations by the Fish and Wildlife Service and the National Marine Fisheries Service on interagency cooperation under the Endangered Species Act, had stated: "Neither FWS nor NMFS intends that section 7 bring about the waste that can occur if an advanced project is halted . . ." The FWS and NMFS said, in the proposed regulations, that the affected agency must decide whether the degree of completion and extent of public funding make it preferable to complete the project.

Said FWS and NMFS—in the final rulemaking on interagency cooperation under the Endangered Species Act: “This discussion in the preamble was based on an analysis of the case law on retroactivity under NEPA. It was originally believed that retroactive situations under NEPA and the Act were analogous enough to warrant the incorporation of the NEPA case law into the section 7 regulations.”

However, the FWS and NMFS “now reject the analysis of retroactivity in the proposed rulemaking’s preamble and adopt the rationale of the Sixth Circuit” in its decision on *Hill v. TVA*.

The Fish and Wildlife Service, then, originally opposed “the waste that can occur if an advanced project is halted,” and would have so written the final regulations if the courts had not ruled that the Endangered Species Act permitted no such flexibility.

The Congress can correct this inflexibility by amending the Endangered Species Act to exempt those projects which were under construction or in existence before the Endangered Species Act was enacted.

#### LEGISLATION CURRENTLY BEING CONSIDERED

A current Senate proposal to amend the Endangered Species Act. (S. 2899) would establish a seven-member Federal board to decide, when there was an irreconcilable conflict, which projects could be exempt from the 1973 Endangered Species Act. Under S. 2899, a project could be exempted if the board members determined—among other factors—that the benefits of the project “clearly outweigh” the value of the threatened species. S. 2899 was reported out of the Senate Environment and Public Works Committee May 15, but has not been scheduled for Senate floor action.

This is an attempt to balance priorities. However, there are major flaws in this legislation. Attached is a resolution on this legislation adopted by the Association at its annual National Conference on May 9, 1978 in Atlanta, Georgia.

The board would be composed of the Secretaries of Agriculture, Army, Interior, the Smithsonian Institution, the Chairman of the Council on Environmental Quality, the Administrator of the Environmental Protection Agency, and the Governor of the State affected by the Committee action. Thus, in its composition, the board is weighted in favor of species preservation.

Notwithstanding the composition of the board, the preservation bias would be further aggravated by the requirement that exemption of a project from the Endangered Species Act would require an affirmative vote of five of the seven members rather than a simple majority. Thus, the composition of the board and the vote requirement make exemption prospects remote at best.

Further the exemption criteria contained in S. 2899 are unrealistic and cannot likely be met under the best of circumstances. For a project to be exempted, the board must find that: 1. It is of regional or national significance; 2. there is no reasonable or prudent alternative; and 3. the benefits of completing the project clearly outweigh the benefits of conserving the species.

The threshold question is whether a board is needed at all. If more balanced and flexible criteria are developed for weighing the benefits of a project to be applied by Fish and Wildlife during the consultation process, a board would be superfluous. The board, of course, represents a proliferation of bureaucracy. Finally, there are administrative problems in the operation of the board. Exemption decisions must be made by the board members themselves, not by their representatives or by proxy. It would be difficult to get all board members together at one time, thereby hindering rapid resolution of the problem.

If the Congress determines that exemption decisions should be made by a board rather than by the Fish and Wildlife Service, APPA believes that three essential modifications must be made. First, the composition of the board should be more balanced. For example, the views of the Departments of Energy and Commerce are certainly relevant to the problems raised by the Endangered Species Act, and the Secretaries of these two Departments should be included. Second, board decisions should be based on a majority vote. Third, the criteria used to determine whether a project should be exempt should be less arbitrary, more flexible, and create a better balance.

The phrase “regional or national significance” needs to be defined. In addition to regional and national significance, local and state significance should be considered. The requirement that there is no reasonable or prudent alternative to the project is most difficult to meet because it requires proving a negative. This language should be changed to require a positive showing, such as the fact that continuation of the project is reasonable and prudent. The third criterion should be modified to require the consideration of whether a substantial commitment of money has been made

and whether Congress has continued to appropriate money for a project notwithstanding the presence of an endangered species.

#### CONCLUSION

The thrust of the Endangered Species Act, to protect unique species from extinction, must be preserved. However, the Act should be amended to correct its lack of balance and flexibility. APPA does not believe the Act was intended as a tool to stop energy projects under the guise of protecting every obscure subspecies of animal, without balancing the value of the subspecies's existence against the value of an energy project and its benefits to people affected thereby.

As more species are added to the endangered species list, more projects will be in danger of being stopped. Additional requirements for Federal permits and licenses present more opportunity for application of the law. Without emasculating the intent of the Act, APPA believes it must be amended through the inclusion of (1) more precise definitions, (2) a mechanism to balance the value of the project against the value of the species, and (3) a clause to exempt those projects that were already underway before enactment. These changes are needed to preserve the integrity of the Act and similarly protect the social and economic benefits attributed to various developmental projects.

#### RESOLUTION OF THE AMERICAN PUBLIC POWER ASSOCIATION CONCERNING THE ENDANGERED SPECIES ACT<sup>1</sup>

Whereas, under the Endangered Species Act Federal projects, Federally assisted projects, or projects for which Federal permits are required, which threaten the habitat of an endangered species must be stopped regardless of their stage of completion or importance for public needs other than species protection, and

Whereas, Congress is considering amendments to the Endangered Species Act whose professed purpose is effectuation of a balance between endangered species protection and the construction of needed projects to supply public needs, and

Whereas, Senator Culver (D., Iowa) and others have introduced a bill, S. 2899, to amend the Endangered Species Act, designed to resolve conflicts between endangered species and project construction, and

Whereas, S. 2899 would create a seven member interagency review committee with a disproportionate bias, requiring a vote of five of the seven members to act to exempt projects on the basis of criteria virtually impossible to meet, thus preventing rather than promoting impartial consideration of conflicts between projects and endangered species. Now, therefore, be it

*Resolved*, That the American Public Power Association opposes S. 2899 as drafted as a design to foreclose balancing judgments, rather than facilitate them, and urges action (a) to exempt projects begun before passage of the Endangered Species Act; (b) to base the composition of the proposed interagency committee on a more rational balance of interests, such as including the Secretary of the Department of Energy and the Secretary of the Department of Commerce; (c) to base committee decisions on majority vote; and (d) to set criteria for exemption of projects which permit a meaningful weighing of factors affecting the public interest.

Mr. BROWN. I was glad to see you and Mr. Forsythe get some entertainment out of these hearings. I have sat here for several days and watched you very faithfully today hear testimony. I am glad you had some visual entertainment to help you out.

Mr. LEGGETT. We get entertainment out of everything.

Mr. BROWN. I want to tell you why the American Public Power Association is interested in this subject. We represent about 1,400 local public power systems across the country, most of them owned by cities and towns, and we have the job of supplying power to some 30 million Americans. They are affected by the provisions of this act that relate to Federal projects or to licenses for Federal projects or for private projects.

Therefore, we have a direct interest. Our concern with the act is primarily prospective. While there have been some conflicts arise

<sup>1</sup> Adopted at the annual national conference of the American Public Power Association in Atlanta, Georgia on May 9, 1978.

under the act, our concern deals with the future possibilities of the impact of this act.

One is that the law as it is presently interpreted covers a broad array of things. It covers, as the film illustrated, any loans or loan guarantees. It covers licenses, contracts, leases, easements, rights-of-way permits, promulgations of regulations. They have a very broad impact.

Second, as you know, there will be an increased listing of species and of critical habitats by the Fish and Wildlife Service so the act will have a growing impact. I think it is inevitable, as quoted by a writer in Environmental Law Reporter, that this statute is one of the very few environmental laws with mandatory language, and therefore is likely to call for frequent use by attorneys.

So we think that prospectively the act as it presently exists has great potential for problems.

Mr. LEGGETT. Promiscuous, in fact. As I understand it, if a citizen wanted to bring a suit to have that Houston area designated as critical habitat, because the Administration was using medium good sense in not moving ahead with their original publication, theoretically you could get into court and the court could find themselves in exactly the same position as the court found themselves in the Tellico Dam. They had no power whatsoever to weigh the factors in spite of how they may have viewed the merits, and I don't think that is what we intended.

We have real reservations about leaving a piece of legislation lying around as a sleeper out of which people can make mischief.

Mr. BROWN. I guess to followup on what you said, that Supreme Court decision said—the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction at whatever the cost—it said that “the act is designed to prevent the loss of any endangered species regardless of the cost.” If that was the intent of Congress, so be it; but as you suggest, I am not clear it was.

We have three general propositions to make to you: One was that there be more precise definition of terms in the act, the purpose being to narrow somewhat the present virtually unlimited reach of the act and to have Congress specify these limits definitionally in the act, rather than leaving those definitions to the agencies involved.

For example, a question was raised in a court case as to whether existing projects are affected by the act, whether Grand Coulee Dam, for example, might be impacted.

Mr. LEGGETT. Clearly, existing projects are covered by the act and if Federal action adversely affects endangered species, whatever it might be, that action has to be abated.

Mr. BROWN. Yes.

Mr. LEGGETT. It is a strong test and it is unfortunate that we have had this confrontation because I think the act has been working.

Mr. BROWN. There is a problem, that you are more familiar with than I, that you have a project that is authorized and funded by the Congress after presumed examination of all factors and you have the project stopped by a sole factor, the endangered species.

Our third point that we would like to make is the idea of a provision in the act that would grandfather projects that were underway at the time of the passage of the act. As I read it, the proposed regulations that the Fish and Wildlife Service and National Marine Fisheries Service proposed initially for section 7 did state that they were opposed to what they called the waste that would occur if an advanced project is halted, but then the court interpretation led them to the position that they now take, which is, that there is no retroactivity to the act.

We think that there should be, and the Congress could clear up this matter by exempting projects that were under construction or in existence before this act was passed in 1973.

We have another specific problem, that there is no final signoff. If I have a project that is in conflict with an endangered species and there is consultation, if the consultation reaches an agreement, that is not the final step in the process, as I read the regulations. You can go on beyond that to a second consultation if the situation changes once you started the project.

There is a basic question then of what will you do about this. If you do have this conflict between the species and the project, you have a consultation with the Fish and Wildlife Service which is limited to biological factors.

Under the Supreme Court decision, if you cannot reach agreement based on those factors alone, then the project stops. We have a deadlock.

The Senate committee suggested an interagency review board.

We don't like the specifics of the Senate bill which seem to be pretty well established against projects, but there are other ways that might be considered. You could establish broad public policy guidelines, that is, guidelines that take into account economic, social, and other factors beyond the biological, and you find some agency of Government that can apply those guidelines, that can look across the board from a public policy standpoint and not just the biological standpoint. Whether that be the construction agency or the Fish and Wildlife Service itself, or some arbitrating agency within the Government, is up to the Congress.

In summary, Mr. Chairman, we think without question that the thrust of this act to protect unique species from extinction must be preserved, but as you suggest, I don't think the act was intended as a project-stopping weapon and therefore the Supreme Court decision makes clear the need for some constructive amendment in this session of Congress.

Thank you.

Mr. LEGGETT. Thank you very much. It is very helpful.

According to the evidence this morning, were we to exempt projects under construction at the time of the enactment of the bill. The Tellico project would still be in a state of indecision because the agency has not determined what it wants to do under current management.

Mr. BROWN. That is true.

Mr. LEGGETT. So you suggest a balancing mechanism. The subcommittee is thinking of some kind of a balancing mechanism, thinking of using the NEPA process for one thing, and perhaps a few interspersed words otherwise.



Your testimony is helpful. Thank you very much.

Mr. BROWN. Thank you.

Mr. LEGGETT. Next we have Dr. Wayne King of the New York Zoological Society.

Dr. King, you have no prepared statement; is that right?

**STATEMENT OF DR. WAYNE KING, CONSERVATION DIRECTOR,  
NEW YORK ZOOLOGICAL SOCIETY**

Dr. KING. Unfortunately, I do not.

I wish I did but I simply didn't get it typed up.

Mr. Chairman, the staff of the New York Zoological Society urges this committee to oppose any amendments which would weaken the Endangered Species Act of 1973, particularly amendments that would affect Section 7 of that act. We know of no valid justification for weakening the present provisions of section 7.

In arriving at that conclusion, we have examined the scientific, ecological, esthetic, and economic values of conserving wild species. We are also reminded that the United States is party to a number of international environmental and wildlife treaties and conventions, and as a consequence any weakening of the U.S. law will have the predictable effect of weakening similar conservation programs in many other nations.

We are convinced that the true benefits accrued to mankind through the conservation of living species far outweigh any short term, imagined boon gained through the extinction of a species.

The benefits derived from living, wild plants and animals and functional natural ecosystems are seldom acknowledged and invariably undervalued. To illustrate this fact, I would like to cite a few examples of the benefit wild species and natural ecosystems provide to man: A number provide food. People are still dependent on many wild animals and plants for food. For example, over 72 million tons of fish, crustaceans, and shellfish were caught worldwide in 1976. Marine species accounted for 61 million tons of the total; 9.6 million tons were freshwater species, and 1.4 million tons were diadromus species that lived both in fresh and marine waters.

In developed countries such as the United States, fish and seafood account for 7 percent of the total protein and 12 percent of the animal protein consumed.

Fish and other aquatic animals are not the only wild species that are harvested for food, however. In many nations, particularly tropical nations, wild birds and mammals are the principal source of meat. However, the importance of wild animals and plants in the diets of large numbers of people, even in developed nations, is regularly underestimated or ignored because species like squirrels, rabbits, raccoons, wild rice, berries, mushrooms and dandelions seldom feature in the diets of nutritionists and because these wild species are harvested and consumed in places unfrequented by statisticians. If this were not the case, Government administrators might be more willing to conserve these species and to protect their habitats.

Of course, wild plants and animals have a food value which cannot be measured solely by their nutritional content. The wild and semidomesticated relatives of our crop and livestock species are invaluable for use as breeding stock for producing new disease

and pest resistant strains, varieties adapted to different soils and climates, and with improved flavor, nutritional content and increased yields. These characteristics are seldom permanent, for evolution enables pests and diseases to overcome resistance; soils and climate change; consumer demand varies.

The agriculture and livestock industries cannot do without the reservoir of genetic strains available in the innumerable varieties of crop plants and domesticated animals and their wild relatives. The conservation of living wild and semiwild varieties of rice, wheat, corn, sugarcane, tea, soybean, banana, cacao, coffee, tomato, potato and all the other important crop plants is man's only protection against the agricultural equivalents of chestnut blight and Dutch elm disease.

To simply store these varieties in seed banks is not enough, for seed banks can fail. In fact, one of the world's largest collections of corn germ plasm was lost when the refrigerator compressors broke down in one seed bank. The genetic traits of plants stored in seed banks are static, unchanging, while plants and animals conserved in the wild can continue to evolve; and, of course, not all crop plants can be stored in seed banks.

Finally, some wild plants and animals could be significant sources of human food if properly developed.

Another example of such alternate crops is the Jojoba bean, native to the southwestern United States, a species that is now being grown for the wax and oils that it produces, oils essential for the high temperature lubrication of automatic transmissions, oils that until now have been available only from sperm whales.

Of course, wild species are important in the production of medicines. The storehouse of chemical compounds found in wild plants and animals is an irreplaceable source of medicines and other drugs. Curare, cocaine, penicillin and quinine, to name but a few. The development of many synthetic drugs, from aspirin to cortisone and oral contraceptives, was dependent on chemical precursors or related compounds which were derived from wild plants and animals. It is highly doubtful that many manufactured pharmaceuticals would be in use today without the discovery of their natural prototypes.

One-half of the prescriptions written each year in the United States contain a drug of natural origin as the sole active ingredient or as one of the main ingredients. In the United States alone, the value of medicines from higher plants is estimated to be about \$3 billion, and is rising.

Only a small portion of the world's plants and animals have been investigated as a source of drugs.

Incidentally, Mr. Chairman, I would like to digress here just for a moment, because the Houston toad was mentioned in earlier testimony today.

While the Houston toad is not the species involved, I would like to point out that toads produce pharmaceutical products, specifically, Bufotonin and Bufotoxin, which have a digitalis-like effect on the heart.

Ara-C, a compound from a Caribbean sponge—*Tethya crypta*—is an effective inhibitor of cancers such as leukemia. Other compounds from sponges, corals, sea anemones, marine worms, mol-

lusk, sea cucumbers and sea star might be useful in combating cancers, hypertension and cardiovascular disease.

A number of these animals are already valuable sources of antibiotics; yet it is not possible to predict with certainty which species will, and which will not, be useful in the future. The only way these species will be available to benefit future generations of men is to conserve them now; but, of course, wild species also have other industrial uses.

The members of this committee need not be reminded of the importance of forests for industry and commerce. The timber, fibers, fabrics, resins, gums, dyes, waxes, oils and other materials they yield each year earn more than \$100 million for 30 countries of the world, including the United States. And the animals that inhabit those forests and other wild habitats also produce valuable products for industry; beavers, mink, raccoon, otters and many other species supply furs and skins, and yet other species yield chemical compounds useful to industry.

For example, the Japanese insecticide Padan was derived from nereistoxin, a natural poison found in a marine polychaete worm—*Lumbrineris brevicissa*. Padan is effective against strains of insects that have become resistant to organophosphate and organochlorine pesticides, and such species as Colorado beetle, Mexican bean beetle, cotton boll weevil, rice stem-borer, cabbage butterfly and diamond-back moth. Who could have predicted that a worm used only as fish bait would yield such an important compound.

And wild species have important ecological benefits as well. Many species and ecosystems which superficially appear useless are critical to the well-being of economically important species and ecosystems.

For example, mangroves and the swamps they form are considered by many people to be only breeding grounds for mosquitos and other biting insects. For years mangroves were destroyed when coastal areas were developed. Today we know mangroves are nurseries for many commercially important fish species. Similarly, coastal estuaries and shallow embayments sustain the young of the majority of resource species such as cod, herring, plaice and sole which are a direct benefit to mankind. Without healthy mangroves and estuaries, many fisheries would lose productivity or collapse altogether.

Other wild species are of great value as pollinators of agricultural crops, as the predators and parasites of crop pests and as fixers of the nitrogen needed by crops. Those natural ecosystems that are the habitats, breeding and feeding sites of the pollinators and predators and parasites of pests are, therefore, important to the productivity of cropland.

Similarly, watershed forests benefit areas of more direct economic importance by controlling water flow, preventing soil erosion and siltation downstream and preventing flooding.

Many of these wild species have great scientific importance. There are estimated to be more than 5 million different species of plants and animals in the world. These species, their habitats and ecosystems are living laboratories for science. Many significant advances in scientific and intellectual fields have come from study of seemingly unimportant animals and plants.

Understanding of human genetics came about through the study of the genetics of horseshoe crabs and fruit flies. Developmental and reproductive biology began with the study of sea urchin eggs. The development of sonar and echolocation stemmed from the study of navigational sounds of bats.

It is virtually impossible to predict what species will provide another scientific advancement. Three species which recently attracted scientific attention have been as diverse as the black bear—studies on the hibernation of, which have already led to an improved low-protein, low-fluid diet for human patients with kidney failure; the octopus—as an aid to the understanding of aging; and *Umbilicosphaera*, a microscopic planktonic coccolith, which concentrates uranium 10,000-fold and could be a clue to a way of cleaning up radioactive spills as well as a source of some radioactive fuels.

Of course, wild species, living natural resources, provide many emotional, aesthetic and recreational benefits. Wild areas and wild species they contain provide delight, inspiration and instruction to men of every nation.

Living natural resources cost nothing to make and sometimes cost little to destroy, but when destroyed some are expensive to replace and others are totally irreplaceable. Monetary values can be put on those plants and animals and wild products that are traded, and the values are immense. However, other living resources benefit the economy and human life in ways that are virtually impossible to quantify, even though they may be even greater.

How do you evaluate in monetary terms a wild species that is the basis of a pharmaceutical industry? How valuable is a variety that has increased the yield and disease resistance of a major food crop like rice or wheat; and how much more difficult is it to evaluate those as yet unused species and varieties which might provide similar services in the future?

The loss of variety, a species, or ecosystem that yields economic, ecological, or scientific benefits is a cost to society. In some countries the cost might go unnoticed, but only a miniscule minority of humans is in the position of being able to pass up free services; and even this minority should appreciate the consequences of a staple crop like corn being wiped out for want of a wild relative of that crop, or a human disease going uncured due to the extinction of some pharmaceutical species of the forest, river, or coastal estuary. [The preceding materials were extracted from the World Conservation Strategy, Second Draft, being prepared by the International Union for the Conservation of Nature and Natural Resources, 1110 Morges, Switzerland.]

The only way to provide against such contingencies is to conserve wild species today. The minimum goals of species conservation is to maintain a number of populations of each species within the natural ecosystems of which they are a part.

Section 7 of the Endangered Species Act of 1973 is one means of providing such conservation measures. Maintained in its present form, it will assure that many wild species and ecosystems of current and potential value to this Nation and to humanity will not be depleted, degraded, or destroyed. For this reason we urge you to oppose any amendments which will in any way weaken the

provisions of section 7. Any such changes will have broad international effects.

The Endangered Species Conservation Act of 1969 required the United States to convene a conference for the purpose of concluding an international agreement on trade in endangered species. That plenipotentiary conference was held in Washington, D.C., in February and March, 1973, and produced the Convention on International Trade in Endangered Species or Wild Fauna and Flora.

Implementation of the provisions of that convention required changes in the U.S. Endangered Species legislation, changes embodied in the 1973 act.

Of equal importance, implementation in every nation that is party to the Convention required the passage of new legislation or administrative regulations in each of those countries.

The United States has been the world leader in protecting endangered species. It was the first nation to systematically endeavor to protect threatened and endangered species. All other nations follow.

If the United States amends section 7 of the Endangered Species Act of 1973, and thereby announces to the world that we are not willing to protect endangered species, that we will not maintain wild species in sufficient numbers to perform their normal role in the ecosystem as called for in the Convention on International Trade of Endangered Species, we will see similar retreats in other nations around the world. To date, 45 nations have ratified or acceded to the convention. Many will undoubtedly follow any lead that the United States gives, any lead that permits the knowing and active extinction of species.

In addition to the Convention on International Trade of Endangered Species or Wild Fauna and Flora, the United States is party to many other conventions and treaties which require protection of endangered species. Amendment of section 7 to knowingly approve the extinction of a species would abrogate provisions of bilateral and multilateral agreements the United States has with more than 55 nations.

The New York Zoological Society hopes that you will carefully weigh any consideration that may be given to any weakening provisions to the Endangered Species Act, and especially to section 7. To repeat, the staff of the New York Zoological Society urges you to oppose any amendment to section 7.

Thank you.

Mr. LEGGETT. Thank you very much. You have been very helpful. You certainly have pointed up the pros of this legislation.

Let me ask you this: Are you bothered by that movie that was shown by the chamber?

Dr. KING. The movie was clearly biased.

Mr. LEGGETT. Clearly.

Dr. KING. Yes, sir.

Mr. LEGGETT. Undoubtedly.

Dr. KING. Because it did not make clear that in fact the proposed listing has no impact on the private development.

It also points up the weakness of the administration of the law, not the weakness of the law.

If I can speak now as an observer, if you will, of the Federal action—there are some populations of the Houston toad that we know exist, and I would not think it unreasonable to declare those areas as critical habitat now, and for a short while to hold off declaring questionable areas critical habitat until we have some further observations. If in fact the toads do not occur in these questionable areas any more, then it is meaningless to declare those areas within the city to be critical habitat.

I think this shows a failure of administration. It has nothing to do with the weakness in the law. That is one of the reasons why we think the law does not have to be changed. We think that the interests of the species can be reconciled with the needs of man. We do not see any real conflict.

Mr. LEGGETT. I think you might be right.

The problem is that there are court decisions and bureaucrats in Washington and outside that are somewhat myopic, and sometimes you get untold bizarre results. The question is to what extent this subcommittee ought to guard against actions like that.

There is some inconsistency in our overall policy. You spent a large portion of your time talking about good and beneficial actions that result from many remote species, and most of them that you mentioned were not endangered and are being used industrially for profit for people.

Dr. KING. Mr. Chairman, I certainly agree that most of the examples I used were not endangered species. I used them simply to point out that we cannot predict which will be of use and which will not.

Mr. LEGGETT. The point I was going to make was that under the Fish and Wildlife Coordination Act you can have a stream full of budding golden trout, and if they are not endangered and are productive and are being harvested, then we coordinate, mitigate, and use reasonableness, and the projects many times can move ahead.

Sometimes we have found that we have moved ahead and we have damaged species. Now we are trying to effect some repairs to those species in the Central Valley of California, as an example, but it is somewhat inconsistent that we can measurably damage a sport fishing resource or even a commercial resource under existing law, under a purported balancing act. But under this particular act, the way it is drafted, without any legislative history whatsoever, why we apparently can do no balancing whatsoever, in spite of the fact there was no legislative history to support the plain meaning of the legislation. It is the feeling of many folks, as yourself, that there is something sanctified in this language.

Many times those of us who pass laws, who know that many times the legislative intent of many Members of Congress was almost nonexistent when a bill was passed, do not look at legislation quite in the sanctified way that many folks do from the outside.

It is very difficult for a Member of Congress to go back out in the outside world and practice law and try to interpret what the Congress intended, because you know damn well that most of the Congress is out to lunch at the time that opinions are formulated by a feeling. Many times those opinions are inserted in the record

in revisions and extensions and are rarely uttered. I am not so much worried about what examples we set for the rest of the world, because if the rest of the world has a bill exactly like ours, which I doubt, they should not be scared by bizarre examples that occur in the United States.

I do believe that in all these situations that arise, we should have some standard of reasonableness to guide us, rather than to be bound by the precise verbiage that happened to find its way into a statute.

Any questions, Mr. Thornton?

Mr. THORNTON. Dr. King, on this question of designating critical habitat in an area where the species is not known currently to exist. Do you think that is a wise procedure?

Dr. KING. No, I do not. I think that the searching for it, because it did occur there historically, should continue, and it should be declared in areas where we know the species to occur. We should announce that we are looking, we are considering it, but I do not think that it is reasonable to declare critical habitat in areas where there is reasonable doubt that the animal or plant might not today exist.

Mr. THORNTON. Under the regulations critical habitat is defined in such a way as to include additional areas for reasonable population expansion. I gather, really, that in the Houston toad example that may be the language that the Department of Interior is leaning on.

Dr. KING. Except that if it no longer occurs in the city, than the reasonable expansion is an expansion covering tens of miles from the two other populations where we know it to exist, and those distances may be excessive for a toad. I am not saying we should not declare those areas in downtown Houston critical habitat. All I am saying is that it does not make sense to declare it critical habitat if in fact we do not know that the species occurs there.

I would simply delay on those areas until we have further information.

Mr. THORNTON. So your position, then, would be that critical habitat should only be designated where a population currently exists?

Dr. KING. Or where we think that it has a reasonable chance of existing.

Mr. THORNTON. That raises the issue discussed by the film. Apparently there is a possibility that the toad has a chance of existing in those areas in downtown Houston.

Dr. KING. That is right, but I do not think that you can write most laws so that they are always black and white situations. I think that to administer most laws, you are going to have to use a little bit of intelligence, and we do know where the toad occurs, those areas we set aside as critical habitat right now. There are areas where the preponderance of evidence suggests that they might occur. I would say maybe we want to set those aside. Where the preponderance of evidence is that they do not occur, then I think we should not set those areas aside.

I also think that it is bureaucratic folly to send people out into the field to find out if the species exists, when you know it is the wrong time of the year to find the species.

Mr. LEGGETT. If a species cannot be found in an area, you would presume that the area is probably not critical for its survival. It probably is just the opposite. So I think, again, it is a question of using good sense. I guess all of these species have got to have some kind of a constituency. I have used the example before of 500 tule elk in California. Everybody wants to protect them, but everybody unanimously agrees they are not endangered. We are shifting them around in the State. I look at the endangered species technical bulletin put out by the U.S. Fish and Wildlife Service, and I do not know exactly what they say about the bobcat, but considering the bobcat and the river otter, apparently they are summarizing the populations of these species by State, and they rank all the way from 3,000, 4,000 or 5,000 to 200 per State.

Dr. KING. Mr. Chairman, nobody has suggested that bobcats or river otters are an endangered species. They are listed on the appendix 2 of the Convention on International Trade.

Mr. LEGGETT. An international species.

Dr. KING. Which simply says that they have to have export permits to be traded internationally. There are some populations that are endangered, and we should strive to restore those. There are some populations that are abundant. The problem there came about when the governmental office that issues permits or advises on whether permits should be issued read the law very clearly. It says that in making the decision whether a permit should be issued or not, they have to determine whether the population can stand a harvest. But when you have no data on what the status of populations are, how can you advise whether a harvest can be sustained or not? So the office simply refused to issue any permits until the data were collected, and that is exactly what has happened. They are still collecting data for some States, and will be for several years. In other States they provide data. In other States they provide questionable data. The bobcat and otter are really a different issue.

Mr. LEGGETT. It is very helpful. Thank you very much for coming down. Please, give your notes to the reporter or transcribe those and send them to the reporter.

Dr. KING. I will have them transcribed and send them, Mr. Chairman.

Mr. LEGGETT. I think your testimony might be more accurately reported, which would be helpful. No reflection on our reporters.

Next is Dr. Stephen Edwards, Executive Director of the Association of Systematics Collections.

#### STATEMENT OF STEPHEN R. EDWARDS, EXECUTIVE DIRECTOR, ASSOCIATION OF SYSTEMATICS COLLECTIONS

Dr. EDWARDS. Thank you, Mr. Chairman.

Mr. LEGGETT. Do you have a prepared statement?

Dr. EDWARDS. Yes, it has been submitted for the record.

Mr. LEGGETT. That will be included in the record. You can go ahead and summarize that, if you would, sir.

[Complete statement follows:]



STATEMENT OF STEPHEN R. EDWARDS, PH.D., EXECUTIVE DIRECTOR,  
ASSOCIATION OF SYSTEMATICS COLLECTIONS

ACQUISITION AND EXCHANGE OF BIOLOGICAL SPECIMENS UNDER CURRENT LAW:  
A PROPOSAL FOR INSTITUTIONAL EXEMPTION

The Association of Systematics Collections was founded in 1972 with 24 institutions to improve management and development of natural history collections and to facilitate use of those collections in science and by society. "Collection" denotes more than physical housing and maintenance of preserved or living organisms. Each specimen contained within a collection represents a unique information set, which minimally must include the following data: the precise locality from which the organism was obtained; the date on which it was obtained; and the person who collected it. Other information that normally are associated with each specimen are the name of the person identifying the specimen, field notes documenting the details of the habitat from which the organism was taken, weather conditions, description of colors in life, notes on behavior and other species found at the same locality. In addition, a given specimen is accompanied by a host of ancillary data and documentation such as photographs of the living organism and the habitat in which it was found, microscopic slide preparations of the specimens' genetic material, preparations of parasites associated with the organism, and, if appropriate, recordings of sounds the organism produces. Therefore, these collections represent a complex inter-related data base that should be readily available to address problems of science and society.

Today the ASC membership is comprised of 70 institutions and 14 professional societies. The institutional members include large and small private museums, private and State universities, and Federal and State government collections (see attached sheets).

Our professional societies are also cited on the attached sheets. These societies all have international memberships and a stated commitment to systematic biology with a majority of their members carrying out research on the systematics of plants and animals.

The collections represented through the Association hold in trust over 900 million biological specimens representing the spectrum of plants and animals that comprise an important component of our natural heritage; and with the 2,000 scientists who manage the collections, the documentation on each specimen and associated libraries, they comprise a significant National Resource.

Federal statutes that directly affect the normal activities of biologists are: The Endangered Species Act of 1973 (administered through the U.S. Fish and Wildlife Service and the Endangered Species Scientific Authority); the Lacey Act (administered through the U.S. Fish and Wildlife Service); Marine Mammal Protection Act (administered through the National Marine Fisheries Service, Marine Mammal Commission, National Oceanic and Atmospheric Administration, and the Fish and Wildlife Service); the Migratory Bird Treaty Act (administered through the Fish and Wildlife Service); the Black Bass Act (administered through the Fish and Wildlife Service); and the Animal Welfare Act (administered through the Public Health Service and the National Institutes of Health). Also, the "Convention on the International Trade in Endangered Species..." (administered in the United States through the Fish and Wildlife Service and the Endangered Species Scientific Authority) affects systematists. Today, over 27 different offices in government agencies have some authority over biological species.

Today natural history collections serve as a basis for research into the nature, origin, development, and past and present relationships among plants and animals. Further, they serve as specialized "libraries" whereby the precise identity of each kind of plant or animal can be determined. This service is possible because of the international codes of nomenclature that must be followed to describe a "new" species and require that examples of the newly described species be deposited in recognized collections throughout the world as Holotypes and Paratypes. Without an alphabet, words and functional written communication cannot proceed. "Type" specimens provide a reference standard for that alphabet and insure a world-wide scientific stability. The capacity of this community to function is absolutely dependent on the free exchange of specimens between institutions in different countries. This leads me to the primary reason

for my presenting this statement. It was through the natural history community that factual data of decreasing populations of particular species were first obtained. Out of such knowledge emerged the "endangered species" concept. The concept relates only to the current or perceived status of a particular species, rather than addressing more important issues. For example, how can we ensure reestablishment of a species' population as an integral component of its community? What factors contributed to the endangered status and what roles did these factors play? Herein lies the fundamental conflict between the natural history museum community and the regulatory law designed to implement the Endangered Species Act. Today, basic research is being determined by regulations that tend to discourage research into these important questions--the answers to which are essential if species currently recognized as endangered or threatened are to regain a so-called "normal" or "healthy" status or to determine if indeed they are endangered at all.

A mechanism must be developed that allows, and encourages, biologists to pursue responsible research programs without inhibitory control by government regulatory agencies.

However, before such a mechanism can be presented, various factors that have contributed to the current problems must be reviewed.

--Federal laws exist as statutes (the authorizing legislation) and regulatory laws promulgated by a variety of controlling agencies.

--Most statutes that control the acquisition and use of wildlife are fundamentally sound from a biological perspective while the regulations, designed to implement these statutes lack this biological perspective. Further, both the statutes and regulatory laws were promulgated primarily to control excessive commercial activities ostensibly--not the biologist/scientist.

--The controlling agencies that are charged with developing and enforcing the regulations are unfamiliar with curatorial procedures and the relevance of the collections to research--the documentation that is maintained on each specimen (field notes, specimen labels, collection catalogs, cross-referenced geographic and species catalogs); the importance of supplementary collections (skeletons, chromosome preparations, stomach contents, eggs, and others); loan and exchange procedures; and lastly, the fact that the systematics community is international in scope and relies heavily on interactions and exchanges with colleagues in other countries.

--Government agencies increase in size as long as a need is perceived, and this growth is in part dependent upon increased controls. Further, the regulatory agencies are obligated to enforce the regulations under the authorizing statutes; however, the professional biologists employed by the government are themselves subject to the controlling regulations.

--Biologists in the academic/museum community have been "insulated" from the effects of regulations in the past and, when given the opportunity, have seldom provided pertinent comments on proposed regulations. However, the regulations, as they are now enforced, place the burden of "proof" of presumptive violations on the biologist.

--Institutions in which biologists are employed ultimately are accountable for the professional actions of their staff.

--The biological community represents a relatively small proportion of the total population controlled by these regulations and the specimens maintained in our collections have no commercial value; their acquisition is based solely on their use in basic research programs.

--Not all biologists adhere to the existing regulations, primarily through ignorance; however, a small number have committed premeditated infractions.

--Fossils represent a special problem in which the concepts of the Endangered Species Act are not valid--the only "endangered" fossil is one that has not been collected and properly cared for in a museum collection.

--The information used to substantiate the need for the Endangered Species Act and the Convention on the International Trade in Endangered Species... were, for the most part, derived from basic research programs which are supported in the systematics museum community.

--And finally, there is clearly an extreme need for further investigations of the world's biota by qualified biologists, particularly of "endangered" species. If the undue influence of the regulatory law is not relaxed to permit this research, the very bases for these statutes and regulations (i.e., preservation of the world's biota) is questionable from a scientific point of view.

With these factors in mind it is therefore proposed that the Federal government provide blanket exemption to qualified not-for-profit scientific institutions to:

1. Import and/or export (mail, hand carry, etc.) any preserved and living specimens (non-commercial) including their parts and products for scientific purposes.
2. Accession any preserved or living specimens.
3. Loan and/or exchange any preserved or living specimens between/among qualified institutions and individual scientists considered to be qualified by the loaning institution, throughout the world.
4. Authorize qualified professional biologists under the authority of the institution to collect new specimens of plants and animals according to guidelines prepared by the institution and take into account the laws of foreign

countries in which collections may be made.

5. Use any international port-of-entry to import and/or export preserved specimens in compliance with U. S. Customs import/export tariff regulations.

Qualifications for an exemption for a not-for-profit scientific institution would include:

1. The collections of organisms within the institution are documented and maintained in a manner that insures accessibility by professional biologists and consistent with discipline standards.

2. The data on the specimens are recorded according to discipline standards on each specimen.

3. The specimens are available for loan to professionals in other institutions.

4. Records of accessions, loans, and exchanges of specimens are maintained and accessible.

5. Professional curators are employed by the institution.

Finally, the obligations of a qualified institution should include:

1. Development of internal mechanisms with the endorsement of the institution's administration, for granting permission to individual curators to collect, accession, and/or import/export preserved specimens. These guidelines would also describe review and appeal procedures and penalties for violations.

2. Submitting a copy of these institutional guidelines to an appropriate federal agency for review.

3. Maintaining records on new specimens that are acquired and insuring that records and collections are accessible for inspection by authorized representatives of the appropriate Federal agency.

## MEMBERSHIP: ASSOCIATION OF SYSTEMATICS COLLECTIONS

INSTITUTIONS

Academy of Natural Sciences of Philadelphia  
Agriculture Canada  
American Museum of Natural History  
American Type Culture Collection  
Arkansas State University  
Beltsville Agricultural Research Center  
Bernice P. Bishop Museum  
British Columbia Provincial Museum  
Buffalo Museum of Sciences  
California Academy of Sciences  
Carnegie Museum of Natural History  
Cleveland Museum of Natural History  
Charleston Museum  
Cornell University  
Delaware Museum of Natural History  
Field Museum of Natural History  
Florida Department of Agriculture and Consumer Services  
Fort Hays State University  
Gulf Coast Research Laboratory  
Harvard University  
Illinois State Museum  
Illinois Natural History Survey  
Louisiana State University  
McGill University  
Miami University  
Michigan State University  
Missouri Botanical Garden  
Milwaukee Public Museum  
National Fish and Wildlife Laboratory  
National Museum of Natural History  
National Museum of Natural Sciences  
Natural History Museum of Los Angeles County  
New York Botanical Garden  
New York State Museum and Science Service  
North Carolina State Museum of Natural History  
North Carolina State University  
Ohio State University  
Pennsylvania State University  
Purdue University  
Royal Ontario Museum  
San Diego Natural History Museum  
Santa Barbara Museum of Natural History  
Southern Methodist University  
Texas A & M University  
Texas Tech University  
University of Alaska  
University of Arizona  
University of California-Berkeley  
University of California-Davis  
University of California-San Diego  
University of Colorado  
University of Florida  
University of Illinois

## MEMBERSHIP - 2

University of Iowa  
 University of Kansas  
 University of Louisville  
 University of Michigan  
 University of Minnesota  
 University of Missouri-Columbia  
 University of Nebraska-Lincoln  
 University of Texas-Austin  
 University of Texas-El Paso  
 University of Southern California  
 University of Washington  
 University of Wisconsin  
 Virginia Polytechnic Institute and State University  
 Washington State University  
 Western Foundation of Vertebrate Zoology  
 Yale University  
 Zoological Society of San Diego

SOCIETIES

American Arachnological Society  
 American Ornithologists' Union  
 American Association of Botanical Gardens and Arboreta  
 American Society for Microbiology  
 American Society of Mammalogists  
 American Society of Plant Taxonomists  
 American Society of Ichthyologists and Herpetologists  
 Coleopterists' Society  
 Entomological Society of America  
 Herpetologists' League  
 The Paleontological Society  
 Society of Systematic Zoology  
 Society of Vertebrate Paleontology  
 Society for the Study of Amphibians and Reptiles



Dr. EDWARDS. Thank you. As executive director of the Association of Systematics Collections, I am submitting for the record a proposal for exemption of not-for-profit scientific institutions from the overburdening wildlife permit requirements, specifically under the Endangered Species Act, that the biological community is now forced to deal with. This proposal, I might add, was unanimously endorsed by the association's membership at our recent annual meeting. The organization I represent is comprised of 70 major research institutions throughout the United States and Canada, a list of which is provided in the material that has been submitted.

We maintain biological research collections of both living and preserved animals and plants ranging from viruses and bacteria through mammals and flowering plants. The regulations that we face in the course of performing our basic mission, research, are excessively prohibitive. Today over 27 different offices in the Federal Government alone have some authority over biological species, and therefore over biologists.

Most statutes that control the acquisition and use of wildlife are fundamentally sound, from a biological perspective, while the regulations designed to implement these statutes lack this biological perspective.

The controlling agencies that are charged with developing and enforcing the regulations are unfamiliar with curatorial practices in our museums, and the relevance of the collections in our research—the documentation that is maintained on each specimen, the importance of supplementary collections, such as skeletal or chromosome material, the importance of loan and exchange procedures, and the fact that the natural history museum community is international in scope and relies heavily on interactions and exchanges with colleagues in other countries.

Both the statutes and the regulatory laws were promulgated ostensibly to control excessive commercial activities, not the biologist/scientist. Further, we have learned within our own community that the regulations as they are now enforced place the burden of proof of any presumptive violations on the biologist.

The biological community represents a relatively small proportion of the total population controlled by these regulations and the specimens maintained in our collection have no commercial value. Their acquisition is based solely on their use in basic research programs.

Finally, there is clearly a need for further investigations and study of the world's biota by qualified biologists, particularly those species which we refer to as endangered. If the undue influence of the regulatory law is not relaxed to permit this research, the very basis for these statutes and regulations is questionable from a scientific point of view.

Some specific problems we face with the Endangered Species Act are: The grandfather clause that provides that any specimen acquired or obtained after December 28, 1973, that is subsequently determined to be endangered, falls under the purview of the Endangered Species Act. Therefore, we are obligated to secure the permits to continue to maintain it and use it in our basic research programs.

Even though we have acquired specimens legally, subsequent loans and exchanges of these specimens may require additional permits. And, finally, because parts and products of an endangered species are also controlled, we are required to secure special permits to loan or exchange or acquire them. To carry this to the extreme, a fossil of a cat that roamed the plains in the Pleistocene, is subject to the permit requirements of the Endangered Species Act.

A recent letter from a colleague very clearly addresses the issue:

I speak with feeling, having fought a long fight to import a single preserved specimen of an endangered species from Australia as a loan. I guess it has all been worth it, but I will never do it again. I could have researched and written two decently long papers in the time it has taken to hassle the specimen into and out of the United States. In terms of time, energy, and money it has been counterproductive to study regulated specimens.

With this in mind, it is proposed that the Endangered Species Act be amended—and/or any influence that your committee can direct toward the regulatory agency to accommodate these needs would be appreciated—to provide blanket exemption for qualified not-for-profit scientific institutions to:

Import and/or export by mail, hand carry, et cetera, any preserved and living specimens of a noncommercial variety, including their parts and products, for scientific and education purposes; that these institutions be permitted to accession any preserved or living specimens; that these institutions be permitted to loan and/or exchange any preserved or living specimens between or among qualified institutions, and individual scientists considered to be qualified by the loaning institution anywhere in the world; That these institutions be allowed to authorize qualified professional biologists, under the authority of the institution, to collect new specimens of plants and animals according to guidelines prepared by that institution that take into account the laws of any States or foreign countries which may be pertinent; and finally, that these institutions—and designated representatives—be permitted to use any international port of entry to import and/or export preserved specimens in compliance with U.S. Customs, tariff import-export regulations.

It is further recommended that not-for-profit institutions be determined to be qualified for this exemption according to the following conditions:

First: That the institutions maintain collections of organisms that are documented and maintained in a manner that insures their accessibility by professional scientists and are consistent with discipline standards.

Second: That the data on these specimens be recorded according to discipline standards.

Third: That the specimens are available for loan to professionals in other institutions.

Fourth: That the records of accessions, loans, or exchanges of these specimens be maintained and accessible.

Fifth: That professional curators be employed by the institutions.

And, finally, that the administrations of these institutions demonstrate a commitment in writing to the ongoing support and availability of the collection resources.

Furthermore, given the exemption, each such qualified institution should be obligated to:

One: Develop internal mechanisms, with the endorsement of the institution's administration, for granting permission to individual curators or outside professionals to collect, accession, and/or import or export preserved specimens. These guidelines should describe review and appeal procedures for penalties and violations, including turning the names of the individuals over to Federal authorities.

Two: Submit a copy of these proposed guidelines to an appropriate Federal agency for the review.

Three: Maintain records on new specimens that are acquired, and that they provide an assurance that these records and collections be accessible for inspection by authorized representatives of appropriate Federal agencies.

Mr. LEGGETT. I have read the rest of your statement, and I think it is very good. Certainly I do not think that we really intended that there be all this redtape attached to scientific collections. I am going to ask counsel to send your statement over to the Department of the Interior and get their comment on the extent to which they can accommodate your needs under existing law and regulations and the extent to which they believe we need amendments. We will ask them to suggest the form of the amendments.

It is one thing to keep track of species. It is another thing to be masochistic in your effort.

Anyway, we have satisfied some of the zoological needs in this general subject area, because they have some strong representation here in Washington. At least we have attempted to do that, and we have indicated that anybody having problems with the technical administration of this act at the agency level should be in touch with the subcommittee, so that we can see that the wheels of bureaucracy move more slowly. We admonish you to do the same thing, and we will attempt to satisfy some of the reasonable aspirations of your scientific community.

Thank you.

Dr. EDWARDS. Thank you.

Mr. LEGGETT. Thank you very much.

Next we have Mr. Samuel Tucker of the Edison Electric Institute. Your statement, with the map in the back will be included in the record as though you read it. You may make whatever points you care to.

#### STATEMENT OF W. SAMUEL TUCKER, JR., MANAGER OF ENVIRONMENTAL AFFAIRS, FLORIDA POWER & LIGHT CO.

Mr. TUCKER. Thank you, Mr. Chairman.

I was thinking this morning when Mr. Freeman of TVA was telling the story about the bed being on fire, that I feel a little bit like the guy in the room next to him that smells the smoke. I am here today to ask you to keep that fire from spreading to my bed.

Mr. LEGGETT. All right.

Mr. TUCKER. I am W. Samuel Tucker, Jr., manager of environmental affairs for Florida Power & Light Co., whose headquarters are in Miami. I have been with the company for over 3 years. Prior to my present work, I held various positions in State and local

government, including that of Secretary of the Department of Administration for the State of Florida. I am also the chairman of the Land Use/EIS Subcommittee of the Edison Electric Institute (EEI), and my comments today represent the views of the institute. EEI is the primary national association of investor-owned electric utilities.

The concept of protecting and conserving various plant and animal species which face extinction as a direct or indirect result of man's activities appeals both to one's emotions and sense of moral responsibility. There is little doubt that society in general understands the intrinsic value of all forms of life and is willing to take reasonable steps to insure that rare and endangered species are offered protection and the opportunity to propagate.

But we are also convinced that society has other values as well, and that no single value can be absolute in terms of the real world decisions and judgments which society and the government which represents it must make. This is precisely the problem with the Endangered Species Act as it is presently written, interpreted, and enforced.

The basic inflexibility of the act has grave implications on other things society values, such as an adequate, reliable, and economic supply of electrical energy.

Our purpose in testifying before you today is to present some of one company's experiences which typify the problems electric utilities across the Nation are facing with the act. We will also try to give you an idea of some of the problems we see resulting in the future, if the law remains unchanged. We would also hope that testimony will serve to remedy the common misconception that the Endangered Species Act only impacts public works or developments of Federal agencies.

The wide proliferation of environmental regulatory programs now in force effectively encompass practically every significant development by the private sector as well, by virtue of the fact that the issuance of the required Federal permits and licenses provide the trigger to the Endangered Species Act. The broad application presently applied by the Corps of Engineers "404" permit program is a case in point.

I do not think it is necessary to belabor the point, but I would remind the committee that the delivery of electric service requires a system of many components stretching from the generating plant down to each individual home, office, and business. This system of power plants, transmission lines, substations, switching stations, distribution lines, and so forth, covers a typical land area like a spider's web—for the very simple reason that it has to get to where people are.

In such a system, flexibility in planning is very important. Any program which leads to the blanket elimination of large areas from possible use—no matter how limited—or creates for certain animals and plants values which are in essence nonnegotiable and therefore infinite, is going to have unacceptable repercussions. The Endangered Species Act embodies this kind of program.

The need for flexibility in the development of electric utility systems in my own State of Florida is foreboding for other areas of the Nation. Florida, because of its semi-tropical climate has a wide variety of ecosystems with many unique forms of flora and fauna.

The State has a wide diversity of species, with many identified as endangered or threatened. Critical habitats have already been defined for several of these species.

A map of these habitats will demonstrate that much of the State is affected.

I am the Chairman of the Land Use/EIS Subcommittee of the Edison Electric Institute and my comments today represent—I do have a large map here for illustration and a small copy of that attached as exhibit.

Mr. TUCKER. Florida Power & Light Co.'s experience with one of these critical habitats, namely that established for the Everglade kite, makes an interesting point with regard to the need for flexibility.

The Everglade kite is the Florida population of a hawklike bird which feeds on apple snails which exist in freshwater marshes. The present population is estimated to be about 100 birds and has been placed on the endangered species list. Its critical habitat has been designated by the Secretary of the Interior and includes a broad expanse of area in southeast Florida.

It is the area in blue, Mr. Chairman, the two small spots here, this area around the lake, and this entire expanse here, and the particular piece that I am talking about today is one little tip off the edge of that piece of blue.

Mr. LEGGETT. Just 100 birds.

Mr. TUCKER. One hundred birds, yes, sir.

Mr. LEGGETT. And has that critical habitat been designated?

Mr. TUCKER. That critical habitat has been designated. It is indicated in blue.

Mr. LEGGETT. What activity does that preclude?

Mr. TUCKER. It precludes any activities under the act which would destroy or modify that habitat, and it is the word "modify" that we have had the trouble with. It is very difficult to—

Mr. LEGGETT. Are you unable to string electric powerlines through that area?

Mr. TUCKER. Yes, sir. That is the point that I am working up to, and because of that, we are unable to provide the adequate electrical power to the several million people in southeast Florida to insure them against the possibility of blackouts.

Mr. LEGGETT. That is ridiculous.

Mr. TUCKER. I would agree, sir.

My company sought permission to cross about a mile of one corner of this habitat located in the Loxahatchee Wildlife Refuge with a transmission line, or alternatively, to arrange a land swap with Interior. The land in question—and this, sir, is an important point that has been spoke to today—contains no kites or apple snails and is not suitable habitat for either. We offered to purchase another tract of land of equal value that would be suitable habitat and in addition provide \$1 million for its development. That amounts to \$10,000 per bird. Interior rejected our proposal, offering their responsibilities in protecting this endangered species as a principal reason for doing so, and we are presently constructing the line around the area in question at considerably greater cost to our customers. Thus, no one benefited, not even the birds.

I am going to come back to that in a minute.

What is happening in Florida has happened in Tennessee and Maine and the Pacific Northwest and will happen in time in many other places across the Nation. The process of designating threatened or endangered species and critical habitats has only begun and as it proceeds, first for animals and then for plants, the conflicts will spread as well throughout the country.

When we reference the need for flexibility, we are convinced that we are speaking in agreement with national environmental policy. The National Environmental Policy Act of 1969 states that it is national policy:

To create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations \* \* \*

NEPA stresses the necessity of considering all factual aspects of a certain situation in making a decision, along with weighing costs and benefits, and analyzing alternatives. The same kind of philosophy is inherent in the Clean Air Act, the Clean Water Act, the Coastal Zone Management Act, and other environmental legislation. My example of the transmission lines and the Loxahatchee Wildlife Refuge would show the Endangered Species Act to be inconsistent with this national policy.

Philosophically, it might be argued that since the full value of endangered species both now and potentially in the future is unknown, society must be absolute in protecting every identified endangered or threatened species. The reality, however, is that we will never know enough to make absolutely risk-free judgments in difficult situations requiring trade-offs. Risks work both ways, and the opportunities lost in a project abandoned solely because of a perceived threat to some species or its habitat, especially when there are no practical alternatives, also create risks which must be assumed by society.

We would further argue that different endangered species have different values and are subjected to different levels of stress, all of which indicate the need for flexibility and judgment. If a comprehensive ecological perspective including total potential impact of various alternatives is abandoned for the sake of a single species or habitat, then we face the possible imposition of an environmentally suboptimal alternative.

Again, we believe the transmission line example bears this out. In the real world, it is rarely, if ever, an either-or proposition. Creative thinking, cooperation, and good planning can minimize conflict and even lead to a more favorable solution for all concerned, if sufficient legal flexibility exists.

We would like to take a minute to discuss some future problems resulting from the act through the use of another illustration. The geographic isolation of south Florida, being at the end of the line, so to speak, severely limits our ability to establish electrical interties with other systems. This is the traditional method employed by utilities to provide an alternate source of power in the event of the sudden loss of power from within a system. We have one transmission corridor coming in to the southeast Florida from the north, and another from southwest Florida.

Mr. LEGGETT. When they established that large blue critical habitat there for these 100 birds, and they consulted with the Governor of the State of Florida, what did the Governor say?

Mr. TUCKER. I have no idea, Mr. Chairman.

Mr. LEGGETT. That might be federally owned land, but even on federally owned land one must consult with the Governor.

Mr. TUCKER. It is not all federally owned land.

Mr. LEGGETT. It is not?

Mr. TUCKER. Some of it is and some of it is federally leased land.

Mr. LEGGETT. Where is the city of Miami?

Mr. TUCKER. The city of Miami is right down here.

Mr. LEGGETT. So you have an area that is critical habitat for 100 birds, about three or four times the size of the city of Miami, and an area about twice the size of the city of Miami away from Miami.

Mr. TUCKER. Yes, sir, it is many times the size of the city of Miami.

Mr. LEGGETT. The notes that we have on the Everglades dated August 11, 1977 show approximately 11,000 square miles, of which about 400 are Federal. Six hundred are under the control of the Central and Southern Flood Control District and the remainder is under other ownership. I would like to see what the consultation consisted of when they consulted with the Governor and designated that area.

Mr. TUCKER. I am not sure at that point in time whether it was generally understood what the impact of designating critical habitat would be, and I think that more and more people are now becoming aware of what it does mean.

Mr. LEGGETT. That is like the Tellico lower court decision.

Mr. TUCKER. Yes, sir, which, of course, has now been sustained. But my point is that a year or two ago people were a lot less aware of the details of the Tellico case than they are today.

Mr. LEGGETT. Yes.

Mr. TUCKER. Including perhaps the Governor, including my company. We are learning fast.

The Florida Public Service Commission has directed us to construct an additional 500 kV transmission line on a new corridor between Southwest and southeast Florida in order to improve the reliability of service in that area and reduce the frequency of blackouts which have occurred in the past. The commission has also recommended additional generation in southeast Florida to improve reliability over the longer term.

Now, if you take the determination already made by Interior in the Loxahatchee situation that transmission lines are incompatible with the Everglade kite critical habitat, look at the map showing that the kite critical habitat effectively isolates southeast Florida, and combine with that the fact that we would need a 404 permit from the Corps of Engineers—the trigger to section 7 of the Endangered Species Act—the result becomes inescapable. We could not construct the line which is needed to protect 3 million people from blackouts.

I might add that there is a little hole through here. We already have a line there, so it is an alternate line that we need.

How about additional generation? Several years of careful studies have identified only one suitable powerplant site in southeast Florida, our South Dade site, which is a white dot on this map.

It has now been enshrouded by the critical habitat for both the American crocodile and the Florida manatee. Even though the development of this 10,000-acre site would probably result in a net overall benefit to these species, we would still have a direct conflict with section 7 of the act which prohibits any activity which would:

Jeopardize the continued existence of \* \* \*—an—\* \* \* endangered \* \* \*—or—  
 \* \* \* threatened species or result in the destruction or modification of habitat \* \* \*  
 determined \* \* \* to be critical.

The words of the statute thus create an absolute priority for this provision above any and all other environmental, energy, or human considerations.

Mr. LEGGETT. The interesting thing is that if there were 2 million ducks down there in that flyway that are normally in a migratory pattern down, you would, probably construct your line in some kind of a cooperative program. As a hunter I would not like to see you do that, but apparently there would be discretion to work something like that out.

Mr. TUCKER. Are you speaking of the Migratory Bird Act?

Mr. LEGGETT. Yes. I see these powerlines sometimes going right through migratory bird hunting areas, and it certainly deters the migratory patterns of the birds, because one can't shoot a bird near a powerline. They don't go within a quarter of a mile of it.

Mr. TUCKER. What? The birds won't?

Mr. LEGGETT. They sure don't.

Mr. TUCKER. Well, they do in this area, or at least our observations have indicated that they do. We would certainly—

Mr. LEGGETT. Your singing lines don't bother the birds?

Mr. TUCKER. No, sir, they perch on them. In fact we have a problem from the droppings sometimes when they sit on the lines. It is quite common.

Mr. LEGGETT. You don't get any ducks on there though I'll bet.

Mr. TUCKER. You see a little bit of everything on there.

I would suggest that really I don't think that the transmission lines themselves are incompatible. As a practical matter we would not want a transmission line in an area that was hunted because people shoot our insulators out. It causes some very severe problems, as well as considerable expense, so I don't think they are compatible from that standpoint, but the birds don't seem to particularly mind, at least that has been true in our observation.

It has been suggested by some that the section 7 consultation procedure provides the flexibility needed to the act. While this may appear to be true on the surface, in actual practice the citizen suit provisions of the act are being used to deny this flexibility by using the power of the courts to enforce the letter of the law. Even though an agency may be fully cooperative in the section 7 consultation process, and even if the Fish and Wildlife Service is in complete agreement with the agency, any citizen seeking to stop a project for whatever reason may still challenge and stop that action in the courts.

How many projects could stand the test that they do not modify a habitat? I would remind you that it was a citizen suit which



brought on the *Tellico* case and the question of section 7 consultation was not an issue.

The lack of flexibility in the act and the specific provisions for citizen suits combine to provide an open invitation for all kinds of mischief by those whose sole motivation is to stop a project. We also are concerned with the implications for our industry of section 9 of the act as it relates to the taking of endangered species. The rigidity of the language in the act, combined with the Secretary of the Interior's sweeping definition of the term "harm," subject us to constant exposure to violations of the act in the operations of our facilities. While we fully support the goal of prohibiting malicious or purposeful taking of endangered species, we do not feel that the occasional, incidental taking of such species through, say, a bird collision with a transmission structure or the entrainment of a fish in cooling water, should place us in jeopardy of substantial civil and criminal penalties under Federal law. As noted in Justice Powell's opinion in the *Tellico* case "\* \* \* the reach of this regulation which the Court accepts as authorized by the act is virtually limitless."

We believe that the Endangered Species Act, as it now stands, is counterproductive in the long run to the very goals and purposes it was designed to achieve. While fully supporting reasonable protection measures for plants and animals facing extinction, society cannot long function with a total injunction against all risk to such species at any cost. The act is in danger of being totally discredited and discarded as a result of backlash from current events. How long will 3 million people put up with blackouts and brownouts because of what someone perceives as a potential threat to 100 birds? Complete repudiation of the act would not do anybody or any plant or any animal any good.

In summary, the Endangered Species Act ignores practical considerations and forces foregoing of more desirable options in some cases. It flouts common sense, good judgment, and basic national environmental policy. It makes a mockery of the efforts of many people who are truly interested in preserving endangered species and not simply blocking some project. If not amended, the Endangered Species Act may ultimately be remembered as the worst enemy of the very species it purported to save.

Mr. LEGGETT. I think that is a pretty good statement. Let me ask you this. Were there citizens suits brought in Florida in your case?

Mr. TUCKER. No, sir.

Mr. LEGGETT. You just suspect that they might be. You indicated that the Fish and Wildlife Service apparently wanted to be cooperative, but they were afraid of citizens suits.

Mr. TUCKER. No, I don't want to confuse the two. The issue of citizens suits did not enter into our particular situation in the case of the transmission line.

Mr. LEGGETT. The Fish and Wildlife Service has not given you any hope of getting your lines through this blue area, have they?

Mr. TUCKER. No; but we have not, except for the refuge which I mentioned, the one specific project, we have not applied for a permit at this date to do that. I do not believe that such a permit would be issued under the present regulations as imposed by Interior and as interpreted by Interior. They already have a finding of

fact in their files that the transmission lines are incompatible with habitat for the Everglades. Given that in their file, I don't see how, under this Endangered Species Act, they could accede to a permit to allow us to construct a line through there.

Mr. LEGGETT. We will review that with them and get their views. Mr. Thornton?

Mr. THORNTON. Does the problem you are having getting a powerline through only relate to the refuge, or is there another area involved?

Mr. TUCKER. There are two areas. I didn't mean to be confusing about this, but the two did tie together. There is a little kind of tip right here in the blue area where we did try to get permission to put the line through. That was through a refuge.

Mr. THORNTON. Did you file for a permit?

Mr. TUCKER. Yes.

Mr. THORNTON. Did you file an application?

Mr. TUCKER. We filed an application.

Mr. THORNTON. Was that denied?

Mr. TUCKER. Yes.

Mr. THORNTON. On what ground?

Mr. TUCKER. It was denied on several grounds. It was denied, period, and then they gave a number of reasons, including the responsibilities under the wildlife refuge program and also under the Endangered Species Act. That habitat was proposed as a critical designation at that time.

Mr. THORNTON. Was there a biological opinion rendered in that instance?

Mr. TUCKER. Yes.

Mr. THORNTON. What was the conclusion of that biological opinion?

Mr. TUCKER. The connection was that an umbrella effect would occur from the line which would keep the birds from within a quarter mile of the line.

Mr. THORNTON. Did they cite the Endangered Species Act when they denied the permit?

Mr. TUCKER. Yes, they did, not as the sole reason, but as one of the reasons.

Mr. THORNTON. But they also cited the fact that it would be incompatible.

Mr. TUCKER. Yes.

Mr. THORNTON. It occurs to me that is the test under the National Wildlife Refuge Administration Act, and, of course, whether economic uses are permitted is a test of compatibility. It may have been denied under that act rather than under the Endangered Species Act.

Mr. TUCKER. But the point is the finding of incompatibility was a biological finding, in my opinion, rather than under one act or the other. It is accepted by Interior as a matter of fact. We do not agree with it, but they, of course, accept it.

Mr. THORNTON. What was the other instance where you had the problem with the powerline?

Mr. TUCKER. Our Public Service Commission has directed us to provide another major transmission corridor from southwest Florida, where we had generation, into a heavily populous area of

southeast Florida, which includes Miami, Fla., and Palm Beach. The only way we can provide another line through there is to cross the blue area. There is no other physical way that we can comply with the directive of our Public Service Commission, which has this responsibility, without going through the critical habitat.

Mr. THORNTON. Who owns the area that you propose to go through?

Mr. TUCKER. Some of it is owned by the Federal Government and some is private. Much of this lower area here is the Everglades National Park. The upper area is owned by the Central and Central Flood Control District that has now been changed.

Mr. THORNTON. So your permits would have to be received from those agencies and not Fish and Wildlife?

Mr. TUCKER. No, but we would have to go to the Corps of Engineers for a permit because it is wetlands, and that immediately triggers the Endangered Species Act because of the section 7 consultation requirement.

Mr. THORNTON. But the decision whether to grant the permit or not is with the Corps of Engineers and not Fish and Wildlife in that instance?

Mr. TUCKER. That is correct.

Mr. THORNTON. Has the Corps of Engineers rendered a decision on that application?

Mr. TUCKER. We have not made that application.

Mr. THORNTON. Why have you not?

Mr. TUCKER. We haven't gotten to that point in time where we are ready to file.

Mr. THORNTON. So you don't know whether, in fact, they are going to deny it?

Mr. TUCKER. No, I don't know that they are going to deny it, but I would be willing to bet money on it. It is my professional opinion they would not grant that permit under the present administration of that law.

Mr. THORNTON. Have you had biologists look at this issue?

Mr. TUCKER. Yes.

Mr. THORNTON. Is it their opinion that your powerlines would adversely modify or destroy the critical habitat?

Mr. TUCKER. I don't think that is a biological determination. It wouldn't destroy the habitat, certainly. The key word is modify. There is no way you can put a 500-kilovolt transmission line through a large expanse of wetlands without modifying it.

Mr. THORNTON. Mr. Tucker, are you familiar with the *Mississippi Sandhill Crane* case?

Mr. TUCKER. Somewhat.

Mr. THORNTON. Do you realize in that case the court allowed a multilane interstate highway to go through the middle of the habitat of an endangered species?

Mr. TUCKER. No, I didn't know that.

Mr. THORNTON. That happens to be the case. The regulations make it clear the statute is referring to adverse modification. In the *Mississippi Sandhill Crane* case, the decision was made by the court that lanes and cranes could be compatible and that all modifications were not forbidden by the statute. I wouldn't say it is a foregone conclusion in your situation necessarily until you have

had a biological opinion rendered by an independent group of scientists.

Mr. TUCKER. We did that, but the point is the Fish and Wildlife also had one rendered by their biologists which concluded that it was incompatible in the *Loxahatchee* case. That is what concerns us.

Mr. THORNTON. No further questions, Mr. Chairman.

Mr. LEGGETT. Thank you very much. It was very helpful. We will get the view of the Department on that matter, also.

Our final witness today is Lt. Col. Richard A. Graham of the American Falconers Association, United Peregrine Society. He is accompanied by Mr. Frank Bond.

**STATEMENT OF LT. COL. RICHARD A. GRAHAM, THE UNITED PEREGRINE SOCIETY, AMERICAN FALCONERS ASSOCIATION, ACCOMPANIED BY FRANK BOND, PEREGRINE FUND, STATE OF NEW MEXICO**

Colonel GRAHAM. I wanted you to know exactly what we are talking about. A picture is worth a few words so you have the poster showing a peregrine falcon. This is the bird we are so excited about.

For the record, I am Richard A. Graham, a retired lieutenant colonel in the Air Force.

Mr. LEGGETT. Both of your statements will be included in the record as though you read them. Highlight them as you care to. [The statements follow:]

**STATEMENT OF LT. COL. RICHARD A. GRAHAM, (RETIRED) AND NEW MEXICO STATE REPRESENTATIVE FRANK M. BOND, ON BEHALF OF THE UNITED PEREGRINE SOCIETY, THE PEREGRINE FUND OF CORNELL UNIVERSITY AND ROGER THACKER, PRESIDENT OF THE NORTH AMERICAN FALCONERS ASSOCIATION**

I am Lt. Col. Richard A. Graham, (retired) from Colorado Springs, Colorado and am the President of the United Peregrine Society. My colleague, State Representative Frank M. Bond from Santa Fe, New Mexico and I are here to represent The United Peregrine Society, the Peregrine Fund of Cornell University and we have the authority to speak on behalf of Mr. Roger Thacker, President of The North American Falconers Association. Representative Bond is Vice-President of the Peregrine Fund of Cornell University and also a member of the Rocky Mountain Southwest Peregrine Falcon Recovery Team.

We appreciate the opportunity to appear before this subcommittee. We are here today to talk about the Endangered Species Act as it applies to raptors.

We support the Endangered Species Act in its intent to conserve endangered raptors and other wildlife. We strongly object to certain regulations and policies that the Interior Department has promulgated pursuant to the authority of this act and other associated legislation.

The original intent of the Endangered Species Act was to implement methods by which we could save and preserve for posterity various species of fauna and flora which are threatened with extinction. We are here to inform the members of this subcommittee that regulations and policies of the Department of Interior are acting in direct opposition to what we believe was the intent of Congress. Namely, actions or policies that would increase the numbers of an endangered species.

The peregrine falcon, an endangered species, has been raised in captivity *only* by falconers. Instead of encouraging the falconers efforts, the Interior Department regulations and policies have destroyed the incentive for the falconers to raise these birds.

Current regulations and policies prohibit or restrict the following: 1. Use of captive reared endangered species for falconry; 2. Transportation (of such birds); 3. Exchange of captive produced raptors for breeding or falconry purposes.

## COMMENTS

1. The use of captive reared endangered species for falconry purposes will create an incentive for falconers to raise greater numbers of these birds. It should be stressed that falconers are *the* group who have pioneered the successful breeding of endangered raptors and are at present the *only* group engaged in continually successful captive breeding projects, the effects of which can only benefit the species.

2. Unencumbered transportation of these birds is crucial to the captive propagation efforts of all concerned.

3. The exchange of captive produced raptors must occur to allow for expansion and exchange of gene pools. The exchange of these birds for falconry is desirable because it provides incentives to breed more birds. It should be pointed out that the majority of falcons flown in sport are eventually lost in the wild where they may augment wild populations.

After nearly six years of unproductive attempts to obtain workable regulations with regard to the use, transportation and exchange of captive reared endangered raptors, we strongly feel that an amendment is needed to clarify the intent of Congress as it pertains to this Act.

We support the amendment recently adopted unanimously by the Senate Committee on Environment and Public Works in S. 2899. This amendment provides specific relief to those individuals working with raptors. We offer the Senate's amendment to you for consideration and urge you to act on it favorably. The amendment we support is:

Sec. 4. Section 9(b) of the Endangered Species Act (16 U.S.C. 1538) is amended by inserting "(1)" after "(b)" and by adding the following new paragraph:

"(2) The provisions of this section shall not apply to any raptor legally held in captivity or in a controlled environment on the effective date of the Endangered Species Act Amendments of 1978, or the domestic captive produced progeny of any legally held raptor: Provided, That such raptor has not been intentionally returned to a wild state. Persons holding such raptors must be able to demonstrate that the raptors do, in fact, qualify under the provisions of this paragraph. Such persons shall maintain and submit to the Secretary on request such inventories, documentation, and records as are reasonable and as the Secretary may by regulation require: Provided, That such requirements shall not unnecessarily duplicate the requirements of other rules and regulations promulgated by the Secretary."

In conclusion, we have attached for the record ancillary materials to demonstrate the need for the amendment above. Included as attachments are the following which are listed.

1. A magazine article, "Bird Lovers and Bureaucrats at Loggerheads over Peregrine Falcon", which appeared in *Science*, March 10, 1978;

2. A letter from Dr. Tom J. Cade to the Honorable Robert L. Herbst, Assistant Secretary for Fish, Wildlife and Parks, outlining some of the difficulties the Peregrine Fund of Cornell University has had with administrators and law enforcement agents in the Fish and Wildlife Service;

3. A letter from former Senator John V. Tunney to Senator John Culver explaining the intent of his amendment to the Act in 1973; and

4. A letter from Richard A. Graham to Senator John Culver explaining the inadequacy of the most recent Fish and Wildlife Service proposal to take care of our problems administratively.

#### BIRD LOVERS AND BUREAUCRATS AT LOGGERHEADS OVER PEREGRINE FALCON

A popular and scientifically respected program to restore the DDT-stricken peregrine falcon to the eastern United States has been thrown into uncertainty by the U.S. Fish and Wildlife Service.

For the last year Service officials have been raising legal objections to certain aspects of the program, such as whether foreign falcons can be released in the United States and whether all parts of the program can be supported under the Endangered Species Act.

The Service's attitude has provoked a torrent of protest from ornithologists who consider its objections to be legal technicalities inspired by misunderstanding of peregrine biology. In the last few weeks the Service has been showered by critical letters from universities, ornithological societies, and conservancy agencies both in the United States and abroad. A typical protest letter, from Smithsonian Institution director S. Dillon Ripley, condemns the Service's objections as ridiculous and compares them to medieval theological wrangles about the number of angels that could dance on the head of a pin. Keith Schreiner, associate director of the Fish and

Wildlife Service, says that a new policy now being formulated will answer the ornithologists' objections.

The peregrine falcon is a bird of particular interest to ornithologists. It is beautifully marked, has a spectacular flight, and falls like a thunderbolt to catch its prey in midair. In its position at the head of a long food chain, the peregrine was particularly vulnerable to DDT. The pesticide interfered with its eggshell formation and rapidly decimated the populations which once flourished in the continental United States. A few dozen pairs of peregrines survive west of the Rockies, but the eastern peregrine has been extinct for two decades.

The idea of restoring the peregrine to its eastern ranges has been made feasible by Tom Cade, a Cornell University ornithologist who has learned how to breed the falcons in captivity, a feat achieved only once before. The proposal attracted wide support among bird lovers and conservationists. Cade's Peregrine Fund now has a budget of \$175,000, about half of which comes from private sources.

The biological basis of the restoration plan has been widely discussed. At a conference convened in February 1974 by the National Audubon Society and attended by federal officials, the strategy decided upon was to introduce peregrines of as diverse a genetic background as possible, allowing nature to select out the most suitable in place of the lost population.

In line with this policy of maximum genetic heterogeneity. Cade obtained peregrines from Scotland and Spain as well as Canada to serve as breeding stock.

By the end of last year the Peregrine Fund had raised 229 falcons, of which 133 have been released. A breeding population in the wild has not yet been established, but the goal seems within reach.

Several anticipated hurdles have been overcome. It was feared that birds born of Canadian Arctic parents—a population which migrates to South America and back—would also migrate and be lost to the United States. But the peregrines seem to stay in their region of release. Another concern was that the released birds would not learn to hunt: but Cade has shown how human instructors can substitute for the assiduous coaching peregrines receive from their parents.

The trouble between the program and the Fish and Wildlife Service developed abruptly last year and revolves about the somewhat esoteric issue of peregrine subspecies. Taxonomists have recognized some 20 or so subspecies of peregrine falcon around the world, but the difference between the various subspecies is often extremely slight and in one instance is mostly political. In 1968 the peregrine population of the Canadian Arctic was given the subspecies name of *Tundrius* in order that the peregrines surviving west of the Rockies (subspecies *anatum*) could be put on the endangered species list. A third North American subspecies, known as *pealei*, inhabits the Queen Charlotte Islands off the coast of British Columbia. As far as biologists are concerned, the peregrine is one species with various local populations; the named subspecies, according to Robert K. Selander of the University of Rochester, "are doubtfully recognizable and biologically inconsequential taxonomic categories."

Cade's breeding stock of peregrines is drawn from the three North American subspecies *tundrius*, *pealei*, and *anatum*, as well as from two European subspecies, *peregrinus* from Scotland and *brookei* from Spain. The exact taxonomic type that inhabited the eastern United States cannot be recreated: the goal of Cade's program has always been to develop the ecological type best adapted to present-day conditions. The European birds, already well adapted to living in populated areas, may well have useful genes to contribute.

The scientific rationale of Cade's plan was thrown into sudden confusion on 30 June last year when a cable arrived from the Fish and Wildlife Service with the message "Effective immediately, you are not to release peregrine falcon subspecies *brookei* or *peregrinus*. Executive Order 11987 signed by President Carter on May 24 prohibits the release of exotic species." The cable was signed by Howard Larsen, the Service's regional director in Massachusetts.

Meanwhile, back in Washington, Service officials had discovered a quite different snag, one which affected the *pealei* subspecies. Most of Cade's government-derived funds are disbursed under the Endangered Species Act of 1973. The peregrine falcon might seem eminently qualified as an endangered species, but the Service had chosen to list it under the headings of its two endangered subspecies, *anatum* and *tundrius*. Apparently at the prompting of the Forest Service, which was seeking to deal with a quite different problem, Service officials told Cade that Endangered Species funds could probably not be used to support his work with the *pealei* subspecies because it was not endangered.

To ornithologists, the Service's new found interpretations of both the Executive Order on Exotic Species and the Endangered Species Act defied both science and the

commonsense purpose of the two laws. In their view, the Endangered Species Act was written with enough flexibility to give the Fish and Wildlife Service room to support the peregrine falcon program if it wished to do so. As for the order on exotic species, its intent was clearly to keep out noxious pests, not the subspecies of species already established in the United States. Gerard Bertrand, who drafted the order, confirms that it was meant to apply to species, not to subspecies, for the purpose of excluding possible pests.

By July of last year Cade found that his federal sponsor, far from encouraging his program, was raising legal doubts that struck at its whole rationale, as well as in practical terms threatening to bar the use of three of the five subspecies in his breeding stock. The new interpretations, Cade wrote to the director of Fish and Wildlife, represented a change in position which he found "incredible and terribly discouraging."

Six months later the Fish and Wildlife Service had still not clarified the situation. Cade sought support from his fellow ornithologists in a letter of 5 January setting out the historical and scientific basis of the falcon restoration program. The response to Cade's appeal has been a vigorous endorsement of his program, peppered with stringent criticisms of the Fish and Wildlife Service. S. Dillon Ripley described Cade's effort as "a triumph of ornithological management in the very best sense." Thomas L. Kimball of the National Wildlife Federation wrote that it be "unfortunate and arbitrary" for the Service to reverse its support of the program, adding that he had visited one of the release sites and "cannot begin to describe the beauty of seeing a flying peregrine again." Senior officials of the International Association of Fish and Wildlife Agencies, the New York State Division of Fish and Wildlife, the National Audubon Society, and the World Wildlife Fund-U.S. wrote with similar reproofs to the Fish and Wildlife Service. And Derek Ratcliffe, chief scientist of the Nature Conservancy Council in England, wrote that Cade's program "is one of the most far-sighted and commendable nature conservation enterprises yet attempted anywhere in the World." As to the Scottish falcons given to Cade, it would be "discouraging if the practical assistance which my colleagues and myself have given to Peregrine conservation in the U.S. were to come to nothing, especially as a result of an invalid application of the sub-species concept."

Discussions with officials in the Fish and Wildlife Service suggest that their policy toward the peregrine falcon program remains in a state of flux. The Service does not seem to have receded from either of the two legal interpretations which have thrown the eastern restoration program into doubt. At a meeting last month in Annapolis, associate director Keith Schreiner distributed a draft policy statement which indicated that exceptions could be made on a case-by-case basis for release of *pealei* and European subspecies. But Schreiner still doubts both the means and the goal of Cade's program: "The question is whether I should be involved in establishing a new species in an area where the native species has become extinct."

The Service has every right to reassess the program. But instead of conducting a methodical review, it has avoided decision by a policy of long delays, punctuated by abrupt cables and rulings that appear obstructive to most interested parties. An alternative approach would be for the Service to make up its mind whether or not it supports the rationale of Cade's program and to shape its rulings accordingly.

THE PEREGRINE FUND, INC.,

December 22, 1977.

Hon. ROBERT L. HERBST,  
Assistant Secretary for Fish, Wildlife, and Parks,  
U.S. Department of the Interior, Washington, D.C.

DEAR SECRETARY HERBST: I appreciate very much having had the opportunity to meet you and Mr. Harvey Nelson with Secretary Andrus on Wednesday, December 14th, and to outline some of our problems with FWS procedures and policies. There was not sufficient time toward the end of our meeting for me to explain fully our concerns over the current tactics being used by law enforcement agents, and I would like to take this opportunity to detail some of the actions and methods that we feel are excessive and discordant with acceptable American standards for law enforcement.

Our specific complaints about encounters between special agents and personnel of *The Peregrine Fund* have been outlined in a letter dated 22 September 1977 from Mr. Frank M. Bond to Mr. Clark R. Bavin, Chief, Division of Law Enforcement (copy enclosed). They provide examples of the generally negative, suspicious, and unhelpful attitude of most of the agents we meet in the field. My letters of 6 October 1977 and 21 November 1977 to Special Agent in Charge, J. R. Smith (copies enclosed) provide examples of our continuing problems over the issuance of permits. I am

still, at this writing, technically in violation of my Special Purpose Permit, PRT 2-668 NY, which was re-issued to me on 21 October 1977, because it specifically prohibits me from keeping more than *four raptors* in captivity, without a written exception from the Director FWS. I hold more than 150 falcons in captivity. I do *not* have a written exception from the Director in hand, nor have I had any response in writing from a responsible official of FWS to repeated entreaties about this matter and others relating to permit restrictions. Consequently, I have been placed in a vulnerable position in respect to possible seizure of my birds and arrest for exceeding the authorization of my permit.

As I indicated in our discussion with Secretary Andrus, our specific problems appear to arise from a basic change in attitude and *modus operandi* of law enforcement agents—a change that coincided with the re-organization and enlargement of the Division of Law Enforcement that took place in 1974 during the previous administration. In the good old days when I was a young biologist working in Alaska, the law enforcement people were called “conservation officers,” or some title to that effect. They were helpful chaps who knew something about wildlife and who cooperated with biologists by banding birds, conducting wildlife population censuses, and engaging in other scientific and management practices; and—when they caught someone *in the act of committing a violation*—they arrested the guy.

Now they are called “special agents,” and they are highly organized into thirteen semi-autonomous districts with “strike force capability in responding to the District’s investigative and law enforcement needs” (Annual Report—FY 1975, U.S. Fish and Wildlife Service, page 6). According to a news release issued from the Chief, Division of Law Enforcement in 1974, many of the newly recruited FWS agents are ex-CIA, ex-FBI, ex-Secret Service agents, who have come into the Fish and Wildlife Service fresh from their Watergate experiences. Now, surveillance, infiltration, and entrapment are key operative concepts in FWS. A strong presumption of wrongdoing is no longer a requirement for initiating an investigation. Everyone is suspect, and agents spend much of their time trying to develop a potential case or in creating cases where no real evidence of a violation or intent to commit a violation exists.

The attention that the Division of Law Enforcement is directing toward citizens who have an interest in birds of prey has become truly obsessive and oppressive in the last three years. Indians who make articles with eagle feathers, scientists, falconers, breeders, taxidermists, egg-collectors, pet-dealers—it doesn’t matter who you are—if you have a *known interest* in raptors you are automatically under suspicion by law enforcement and you are likely to be singled out for investigation. Of the eight priority objectives listed in the FY 1975 Annual Report for law enforcement under the migratory bird program (page 5), three relate specifically to birds of prey, and two others bear heavily on citizens who have an involvement with raptors. One of the *major accomplishments* mentioned in the FY 1975 report was the development of a master file “on all known parties interested in raptors, including all known dealers in eagle feathers or their parts.” Twice in the summer of 1975 in Alaska I was asked by FWS agents to provide names of people whom I know who make trips to Alaska to rob falcon nests. At the time I thought the idea was to develop a list of “prime suspects,” which I consider an entirely legitimate law enforcement procedure. But—no—the list that has been developed, at great expense to the taxpayers, is a list of everyone interested in raptors. It no doubt includes several thousand names! Such a list is an affront to the integrity of the American people.

The FY 1976 Annual Report shows the accelerated pace of law enforcement activities relating to raptors (see pages 20–22 and 91). There are many unsubstantiated and highly prejudicial allegations of large scale violations involving birds of prey, such as: “Many golden and bald eagles are deliberately taken for the commercial market that exists for their feathers and talons.” “Illegal nest scooping and live-trapping of raptors for falconry occurs (*sic*) throughout the United States \* \* \* Many such violators will resort to any means or devices necessary to steal eggs or nestlings.” “The endangered peregrine falcon has become one of the most valuable gifts that anyone can offer a falconer in the Middle East. Some Americans find it very lucrative to smuggle the birds out of the country to wealthy Middle East monarchs who have paid up to \$25,000 for the birds.” The Division of Law Enforcement has deliberately built up this myth of the \$25,000 Peregrine and the rumor that there is a Mafia-like gang of smugglers, in order to justify its large budget requests under the endangered species program of the Fish and Wildlife Service. I challenge anyone to produce documented evidence that any North American peregrine has been sold for \$25,000 or that there is an organized ring of smugglers involved in trafficking peregrines to the Middle East. The Division of Law Enforce-



ment does harm to the peregrine by publicly exaggerating its marketable value in the minds of people who are then tempted to take falcons. To be sure, some peregrines are being taken illegally, mostly by individuals who want one for themselves or for a friend who may have helped finance an illicit trapping expedition. A few may be going overseas in trade, but the small number of peregrines lost to illegal taking does not justify the large sums of money Law Enforcement gets under the endangered species program for work on this species.

"Undercover agents" are now involved in some specially disturbing activities, which are probably illegal. For one thing, they are attending scientific meetings incognito to seek incriminating evidence by listening in on innocent hallway conversations and to the reports given in the proceedings, as a means to snoop out possible cases to investigate. My Oklahoma Indian student, Bill Voelker, identified two special agents at the annual meeting of the Raptor Research Foundation, Inc. held in Phoenix in November. They apparently thought they were suitably disguised as "raptor freaks," but Voelker recognized them from previous encounters elsewhere. Other agents, I am told, spend their time reading back issues of scientific journals to see what specimens may have been described or reported that might have been taken illegally and that could lead to "opening a case" on someone.

A number of agents are actively attempting to entrap citizens by offering under disguise to buy or sell feathers, specimens, and live birds of prey, especially peregrines, which carry a heavier penalty under the Endangered Species Act than do birds protected under other statutes. We have cited the case of agent Nando Mauldin in Mr. Bond's letter to Mr. Bavin. There are many other such instances. Shortly before I left to attend an international conference on falconry and conservation of birds of prey in Abu Dhabi last December, I received a telephone call from a man who identified himself as a representative of a Texas oil firm. He wanted to know how to obtain some falcons for the oil sheiks of the U.A.E. and said cost was no concern. I referred him to the Fish and Wildlife Service for permits. Later I learned that Mr. Morlan W. Nelson of Boise, Idaho had received the same call. He did some checking and found that the company is non-existent. We now believe the man was a special agent. My Indian student, Bill Voelker, and his father, who maintain a large collection of raptor feathers, have received frequent suspect calls from parties wanting to buy eagle feathers.

Among the examples of major law violations summarized in the FY 1976 Annual Report on pages 21-22, at least two and probably three of the cases involving birds resulted from entrapment by special agents—the Texas dealer who sold two ravens to special agents; the Angelos case, which made Jack Anderson's column and which involved two Peregrines that agents took from the FWS Patuxent research program and offered for sale to a courier for Angelos (who paid \$500 for two falcons, *not* \$50,000); and, I guess, the man who made a down payment of \$500 for an eagle claw necklace and four golden eagle feather war bonnets.

If I read the federal laws correctly, such methods are themselves illegal! For example, the Endangered Species Act says under section 9(g) Violations: "It is unlawful for any person subject to the jurisdiction of the United States to attempt to commit, *solicit another to commit, or cause to be committed*, any offense defined in this section." I assume that special agents are subject to the jurisdiction of the United States. If they are, I believe the Department of the Interior has an obligation to the American people to bring to justice those agents who have violated this prohibition and similar prohibitions in other federal statutes and regulations.

I have focused on our particular problems with law enforcement and on the excessive preoccupation with people who are interested in birds of prey, but I also know that there is widespread disillusionment and dissatisfaction in the scientific and academic community generally over a variety of similar problems that have been generated by the "new mentality" of law enforcement personnel in the FWS. Both within the Fish and Wildlife Service itself and without, scientists and wildlife managers have a low regard for the negative and obstructive way they are being treated by law enforcement agents these days. It is time for someone at a high level of authority in government to correct the situation, which bodes to grow worse.

Sincerely yours,

TOM J. CADE,  
Professor of Ornithology and  
Director, The Peregrine Fund.

MANATT, PHELPS, ROTHENBERG, MANLEY & TUNNEY,  
*Los Angeles, Calif., April 21, 1978.*

Hon. JOHN CULVER,  
*Chairman, Subcommittee on Resource Protection,  
 Committee on Environment and Public Works,  
 U.S. Senate, Washington, D.C.*

DEAR SENATOR CULVER: It has just come to my attention that an amendment I sponsored has been misinterpreted by our Department of the Interior. I refer to the exemption placed in the Endangered Species Act of 1973 regarding species held in captivity or in a controlled environment as of the date of enactment (of the Act).

A little history on the matter might serve to clarify what seems to have become an issue. I was floor manager of the Endangered Species Act of 1973 and was aware of particular problems some individuals were having with the Interior Department in their efforts to breed falcons and increase the falcon population. A case in point at the time was a bizarre government attempt to prosecute Lt. Col. Richard A. Graham on a technicality for his breeding of peregrine falcons. Because of this particular case involving falcons, I proposed the amendment to exempt from the Act those species held in captivity or in a controlled environment prior to the effective date of the Act. The amendment was accepted and became Section 9(b) of Public Law 93-205.

The Denver Post had written a series of articles about the actions the Interior Department had taken against Col. Graham for his attempts to breed falcons before I introduced my amendment. It seemed that the breeding of endangered species was exactly the sort of thing we wanted to encourage. I had the articles inserted into the Congressional Record as an example of what we wanted to guard against.

I now understand that in the case of falcons, Interior, through rather specious reasoning is "interpreting" the exemption to apply only to the pre act falcons themselves and not to their offspring.

The clear intent and purpose of the amendment at the time was to exempt, and especially so, pre act falcons species in captivity that were endangered or threatened. The purpose was to encourage these falcon breeders to continue their efforts unimpeded by the type of government action outlined in the Denver Post articles. It naturally and logically follows that the offspring of these exempt species are also exempt. This action encourages production of endangered falcons by the falcon breeders and tends to increase the numbers of endangered or threatened birds.

Can you imagine where the buffalo would be today if the Interior Department had sent its agents out to interfere with the ranchers who bred them in captivity? I really find it incredible that the Interior Department can so doggedly manage to "interpret" the laws the Congress enacts to suit their own purposes. In this instance it seems clear that Interior is unwilling to relinquish control of a species, even the domestically raised portion of the species and even when common sense would dictate that these captive breeding efforts benefit the species in the wild.

Let me clearly state that the intent of the amendment exempting pre act species held in captivity was naturally intended to include any of the offspring raised in captivity. This is especially true of the falcon species, which caused me to offer the amendment.

In the event that you also think the true intent of my amendment needs to be specifically spelled out, I would ask you to further clarify the issue by amending the Act to read "or their captive raised offspring" where appropriate. I am enclosing a recommended amendment to the existing language of the Endangered Species Act of 1973 which would achieve that result.

Sincerely,

JOHN V. TUNNEY.

THE UNITED PEREGRINE SOCIETY, INC.,  
*April 24, 1978.*

Hon. JOHN C. CULVER,  
*Chairman, Subcommittee on Resource Protection,  
 Committee on Environment and Public Works,  
 U.S. Senate, Washington, D.C.*

DEAR SENATOR CULVER: At the Endangered Species Act Hearings of April 13, 1978, you and Senator Wallop asked that we review the new rules that the Department of the Interior had submitted. This was in regard to the suitability of the new regulations regarding captive populations of birds of prey vs the amendment which we have proposed.

I have now received a copy of the Federal Register Vol. 43, No. 73 Friday, April 14, 1978 and comment as follows: 1. The document does not specify any rules or

regulations that apply to birds of prey or other wildlife, and 2. The document is an invitation to the public to comment on possible directions the U.S. Fish and Wildlife Service might take in formulating future regulations in our area of concern.

From the falconers and falcon breeders point of view, this document does not alleviate our need for a common sense solution to the problems currently imposed upon our actions by overly restrictive regulation. We feel that amendment is still the best solution.

Six years of effort have shown that the Department of the interior will not act in any meaningful way unless forced. As an example, Mr. Greenwalt, Director, U.S. Fish and Wildlife Service indicated at his Confirmation Hearings in 1974 that he would take care of our problem "by regulation or amendment of the Act." This was in response to questions asked of him by Senator Henry Jackson. Nothing was done.

At the Oversight Hearings of 1976 Mr. Greenwalt was again asked the same basic questions by Senator Jackson. As a coincidence, the bureau had proposed, that day, a solution to our problems in the Federal Register. Over a year later we were told the "Captive, Self-Sustaining" program that had been outlined would not apply to our birds of prey.

In October of 1976, a meeting was sponsored in Denver, Colorado by The United Peregrine Society and the North American Falconers Association. From various states, academicians, breeders, falconers and concerned State and Federal government representatives all attended. The U.S. Fish and Wildlife Service sent three representatives from Washington, D.C. and several regional representatives attended the two day conference. The conference voted to virtually de-regulate captive populations of birds of prey as a means of providing incentives to breeders to produce more raptors. Especially, endangered species of raptors.

The result was a Fish and Wildlife Service policy letter to allow breeding of all raptors except those that were endangered. Subsequently the policy was amended to mandate release of captive raise offspring by age two—before they in turn could breed in captivity.

In 1977, Mr. Roger Thacker, President of the North American Falconers Association, Mr. Frank Bond, New Mexico State Representative, and others testified at the Senate Oversight Hearings to once more plead for relief from stifling over-regulation by Interior. Nothing has been done.

On March 28, 1977 a series of questions were addressed by letter to Mr. Herbst, then Assistant Secretary Designate of the Department of the Interior by Senators Jennings Randolph, John Culver, Robert Stafford and Malcolm Wallop. These questions were asked in relation to the March 18, 1977 Confirmation Hearings and included two questions regarding his views on Department policy with respect to the breeding and use of endangered species in captivity. It is my understanding that the questions have never been given an answer to this date.

Now, in April of 1978, we have just concluded additional hearings on the Endangered Species Act of 1973 and all of us are agreed to press for an amendment to the law. An amendment to clearly state the "intent" of the Congress and remove from the Department of the Interior their regulatory prerogative in this specific area. An area we feel has been subjected to "control for the sake of control."

In short, those of us who have met with, pleaded with, argued with, presented data to and fought with the Department of the Interior over the question of captive raised progeny of birds of prey have no confidence that Interior will act in any other way than they have in the past. We are asked to believe that now, with the same old ruse of a new publication in the Federal Register, conveniently submitted at the time of the hearings, our problems will be dealt with. It is our collective thought that if our amendment is not enacted, we can expect to sit around for a few more years before bringing this problem to the attention of another Subcommittee whose members we will hope to educate as to the root causes of problems concerning birds of prey in captivity vs the wild population.

Enclosed is a letter from Dr. Tom Cade to the Honorable Robert Herbst outlining problems he is having with Interior, along with a copy of a recent article from Science, Vol. 199, 10 March 1978. If Dr. Cade, who has done more to save the endangered peregrine falcon than any other single person or agency, is subjected to such action and his motives and achievements are so questioned by the Interior Department, how do you think Special Agents of the bureau treat those lesser citizens not affiliated with a major university, or organization, or those not armed with a PhD?

I have also enclosed a copy of a letter to you, Senator Culver, from Senator John Tunney who sponsored the original amendment to the Endangered Species Act of 1973 exempting pre-act species then held in captivity. As I brought up at the hearings two weeks ago, we thought at the time the Act was amended in 1973 that

the exemption applied to the captive reared offspring of the exempt species we then had in captivity. After being told by Interior and others what Senator Tunney "intended", I decided to ask the Senator myself exactly what he did intend in his amendment. I believe his letter is educational in this matter.

To summarize:

1. The Interior has not yet specified in writing any regulation, nor proposed any that alleviates our problem.

2. We believe the present document in the Federal Register will not result in meaningful regulations as they might pertain to our problem. Further, that once Congress acts on amendments that do not include ours, Interior will continue its course of regulations aimed at control rather than enhancing populations of endangered species. Our problem will remain, to the detriment of endangered species of raptors.

3. The enclosed letter from Dr. Cade and the recent article from Science, Vol. 199, 10 March 1978 outline only *some* of the problems we have to contend with under Interior regulation.

Therefore, we request:

1. That Interior be notified of the contents of the letter from Senator Tunney and that this be adopted as the "intent of Congress" as regards the interpretation of Section 9(b) and that Interior be so directed. This action would negate the requirement for our proposed amendment, or

2. Amend the Endangered Species Act of 1973 in more specific terms such as we have suggested and which was the intent of the original amendment by Senator Tunney.

We believe strongly that our actions in breeding all raptors will help endangered and non-endangered species of birds of prey. Ours is a captive situation but we support restrictions on wild populations. We believe Interior should address its activities to the wild populations, protecting against loss of habitat, of prey species and protecting the historic nesting sites of endangered raptors such as the peregrine falcon. Interior should attempt to control usage of harmful insecticides and promote development of those insecticides that would do the job for the farmer, yet allow birds of prey to breed normally in the wild.

We maintain that the falconers and falcon breeders are not the problem, but rather, that we are a part of the solution towards restoring and saving endangered raptors.

We greatly appreciate the opportunity to bring our views before you and the Subcommittee on Resource Protection.

This letter has been coordinated by and represents the views of:

RICHARD A. GRAHAM,  
*President, United Peregrine Society.*

ROGER THACKER,  
*President, North American Falconers Association.*

DR. TOM CADE,  
*President, The Peregrine Fund.*

Colonel GRAHAM. Most of the testimony today has been about section 7. We intend to address section 9. My colleague and I are here to represent the United Peregrine Society, the Peregrine Fund of Cornell University and we have the authority to speak on behalf of Mr. Roger Thacker, president of the North American Falconers Association. Representative Bond is vice president of the Peregrine Fund of Cornell University and also a member of the Rocky Mountain Southwest Peregrine Falcon Recovery Team.

We appreciate the opportunity to appear before this subcommittee. We are here today to talk about the Endangered Species Act as it applies to raptors.

We support the Endangered Species Act in its intent to conserve endangered raptors and other wildlife. We strongly object to certain regulations and policies that the Interior Department has promulgated pursuant to the authority of this act and other associated legislation.

The original intent of the Endangered Species Act was to implement methods by which we could save and preserve for posterity

various species of fauna and flora which are threatened with extinction. We are here to inform the members of this subcommittee that regulations and policies of the Department of the Interior are acting in direct opposition to what we believe was the intent of Congress. Namely, actions or policies that would increase the numbers of an endangered species.

The peregrine falcon, an endangered species, has been raised in captivity only by falconers. Instead of encouraging the falconers' efforts, the Interior Department's regulations and policies have destroyed the incentive for the falconers to raise these birds.

Current regulations and policies prohibit or restrict the following:

- One: Use of captive reared endangered species for falconry;
- Two: Transportation of such birds; and
- Three: Exchange of captive produced raptors for breeding or falconry purposes.

In order and in more detail as follows:

First, the use of captive reared endangered species for falconry purposes will create an incentive for falconers to raise greater numbers of these birds. It should be stressed that falconers are the group who have pioneered the successful breeding of endangered raptors and are at present the only group engaged in continually successful captive breeding projects, the effects of which can only benefit the species.

Second, unencumbered transportation of these birds is crucial to the captive propagation efforts of all concerned.

Third, the exchange of captive produced raptors must occur to allow for expansion and exchange of gene pools. The exchange of these birds for falconry is desirable because it provides incentives to breed more birds. It should be pointed out that the majority of falcons flown in sport are eventually lost to the wild where they may augment wild populations.

After nearly 6 years of unproductive attempts to obtain workable regulations with regard to the use, transportation and exchange of captive reared endangered raptors, we strongly feel that an amendment is needed to clarify the intent of Congress as it pertains to this act.

We support the amendment recently adopted unanimously by the Senate Committee on Environment and Public Works in S. 2899. This amendment provides specific relief to those individuals working with raptors. We offer the Senate's amendment to you for consideration and urge you to act on it favorably.

Rather than read that into the record, I am sure you are familiar with it, I would like to indicate that we feel the story of the falconers being able to breed these birds is the success story of the decade. We started from scratch 10 years ago when various Government officials said it could not be done and held up permits allowing us to acquire brood stock from the wild for breeding programs. It had not been done, and therefore the Interior Department was reluctant to allow falcons to be taken from the wild for breeding purposes.

Those of us who had a few falcons in possession developed a breeding methodology including artificial insemination and other parameters to the point where last year we produced more falcons

in captivity than were produced in the entire United States in the wild with the exception of Alaska.

Mr. LEGGETT. How much was that?

Colonel GRAHAM. That was close to 200 captive produced peregrine falcon. There are probably fewer than 50 pairs of these birds left in the continental United States today.

Mr. LEGGETT. Including those in captivity?

Colonel GRAHAM. No. That is in the wild.

Mr. LEGGETT. How many are in captivity?

Colonel GRAHAM. I would say we probably have close to 100 pairs. Would you say over a hundred pairs, Frank?

Mr. BOND. I would guess, Mr. Chairman, we have somewhere around 150 to 200 pairs in captivity of all known breeders.

Colonel GRAHAM. So we are in the position that, because of the interpretation of the act by the Interior Department which publishes regulations pursuant to that authority and its policies, we have a situation where we are unable to use those birds amongst us freely. The falconers cannot fly them. This is one of the major groups that want to breed them.

There are several organizations such as our own and the Peregrine Fund of Cornell University, of which Mr. Bond is a vice president, that are breeding large numbers of falcons hoping to maintain a genetic integrity for reintroduction into the wild against the time the chemical and the agricultural interests will provide us with insecticides that do the job for the farmer and for agriculture, and yet not inhibit these birds from free reproduction in the wild.

In the interim, on a global basis, we have the use of these insecticides in South America. Birds migrate, and there are no signs saying you cannot go south into Mexico or Brazil. So our complaint has been that the Interior Department has not been cooperative with us in allowing us to breed and have these birds in a domestic captive situation.

We have the situation where every bird in the United States from a sparrow hawk to a redtail hawk to a peregrine falcon has a Federal tag number. We are not sure this protects the birds in the wild, but it is a surefire way for the Government to maintain records on those individuals involved with birds of prey.

The Senate has seen fit to pass an amendment, or at least pass it through their committee, and we would like the support of this subcommittee to adopt that legislation as an amendment which would not weaken the law, but provide an impetus for those who can to go out and breed even more of these birds.

Mr. LEGGETT. You like the Senate version?

Colonel GRAHAM. Yes, sir.

Mr. LEGGETT. Was anybody opposed to that over there?

Colonel GRAHAM. No, sir, it went through unanimously. There was no one opposed to it. We have been seeking reasonable regulation for 7 years and the Senate is aware of the intricacies involved which would take hours to bring to your attention.

Mr. Bond has several comments that I think you will find very interesting.

Mr. LEGGETT. Are we going to have these birds swooping down all over the country if they are not regulated in some way?

Colonel GRAHAM. Sir, they are regulated under falcon regulations as to whether or not they can be hunted and in how many numbers. We are in the process of domestication of these birds. Falconers have had them for 3,000 or 4,000 thousand years. Those of us who are personally interested in falconry and birds of prey have a special rapport with these particular birds. But we will be able to breed more of them if the falconers can use them in their sport.

Some of the "purists" around would hold if we truly loved these birds we would breed them for release into the wild, but we would not want to use them. I would like to make the analogy that it is like telling a young man he might marry that young lady over there but he would first have to swear out an affidavit that he would not sleep with her because his intentions might not be the purest if that were the fact.

We feel that the use of these birds by the falconry community provides an incentive to breed more of them, and that is in the interest of the wildlife itself. Those birds that are lost into the wild augment the wild populations.

Mr. LEGGETT. Mr. Bond, I see you are with the Peregrine Fund. Do you support everything Mr. Graham has alleged?

Mr. BOND. Yes, Mr. Chairman. For the purpose of the record let me state I am pleased to represent the Capital District in the State of New Mexico in the House of Representatives there, and with that I have had probably a unique experience among people in this country insofar as having worked with this legislation at every level except for the congressional level; that is, I was involved with the legislation when it was companion legislation passed under the auspices of this act in the State of New Mexico.

I was appointed by Mr. Greenwalt, the Director of the Fish and Wildlife Service, to one of the recovery teams which is delegated under the auspices of this act. The recovery teams are designed, as you probably know, to write recovery plans for specific species. I helped generate the plan for the Rocky Mountain and southwestern peregrine falcon.

In addition, as Colonel Graham has noted, I am the vice president of the Peregrine Fund of Cornell University, which is the largest and probably the most successful of the propagation programs. We have bred over a hundred birds last year—we will exceed that this year—almost all of which have been reintroduced to the wild. Its purpose is totally dedicated to conservation. These efforts have gone on in the eastern United States and the Rocky Mountains and the Southwest.

We have in fact started some steps in your home State of California in the San Luis Obispo area.

Mr. LEGGETT. After you let these birds up in the air and encourage them to fly and they swoop down and pick up a rabbit, how do you ever get them back on your glove after that?

Mr. BOND. Mr. Chairman, that is something aside from the conservation program. That has to do with falconry. I can explain that to you. In terms of the conservation program, these birds are released to the wild forever. That is, they are never taken back into captivity, and in most cases those birds are put under wild birds, and therefore it is a supplement to the dwindling populations

in the West. As a matter of fact, in the eastern United States where the populations have been extirpated we are actually reintroducing them free of any natural parents.

To your original question about getting them back in the falconry community, you release a bird and by positive reinforcement by the introduction of food on a lure, you encourage that bird to come back.

Mr. LEGGETT. Of these birds that you raise domestically, what percentage do you put into the wild?

Mr. BOND. Of the Peregrine Fund of Cornell University, absolutely 100 percent is dedicated to conservation. Only in a few cases have we traded them out to individual breeders where those people had gene pool stock of birds that we found beneficial to our program. We are housing some 90 pairs of birds with an annual budget of a quarter of a million dollars. A good bit of that money comes from private sources, some on a grant basis from the Government.

The difficulty we have had with the Peregrine Fund, and with other similar programs I am sure, is that the administrative decisions, the administrative policies, and the interference by the special agents of the Division of Law Enforcement have actually inhibited our program in many ways. I detailed that quite clearly in the oversight hearings before the Senate Public Works Committee last year, and of course I am willing to do so here. On the other hand, it may not be efficacious in terms of the time we have left.

Mr. LEGGETT. Gentlemen, thank you very much for your testimony. I see no reason at this point why we cannot accommodate the wishes of the Senate and your wishes in this regard. We will carefully consider this.

Mr. BOND. Thank you, Mr. Chairman. We do represent a common front, and I think there is actually no dissention within our own organization or among the people involved across the United States with this approach. We appreciate your consideration.

Mr. LEGGETT. Without objection, immediately after your testimony will appear the statement of Milton Barschdorf, chairman of the board of Inland Rivers, Ports and Terminals, Inc.

[The information follows:]

STATEMENT OF MILTON BARSCHDORF, CHAIRMAN OF THE BOARD, INLAND RIVERS  
PORTS AND TERMINALS, INC.

Mr. Chairman, Committee Members, my name is Milton Barschdorf. I am the Port Director, Port of Greenville, Mississippi, and Chairman of the Board, Inland Rivers Ports and Terminals, Inc. I feel it a great honor and privilege to be given this opportunity to appear before you in behalf of the Membership of the Inland Rivers Ports and Terminals, Inc., a non-profit Organization made up of port and terminal operators representing the many navigable river basins of the Nation including those of the Mississippi River system: Lower Mississippi, Arkansas, Ohio, Tennessee and Cumberland, Missouri, Illinois and Upper Mississippi.

There are over 60 ports and 1,100 terminals, public and private, located on the Mississippi River and tributaries system alone serving directly an area covering some 19 States embracing some of the most highly productive agricultural and industrial complexes of the United States.

Our Association recognizes that the ports and terminals of this Nation's network of inland waterways are the agencies responsible for providing the services which support and sustain the water transportation industry and the transfer facilities for the exchange of cargo from one mode of transport to another.



We are dedicated to provide these services to all modes of transportation in the most effective and efficient manner with maximum benefits accruing to the public, the shipper, and the national economy.

Our objectives are intermodal in nature, supporting the proposition that the most economical, efficient and energy conserving transportation system is one which brings the cargo as close as possible to the shipper and receiver by water, utilizing rail and truck service within the intermediate and in most cases shorter ranges of haul where these modes are most efficient to complete the movement.

The great potential of the developments presently underway throughout our transportation system brought about by greater efficiencies in the marine industry at substantial capital outlays, including the LASH and SEABEE concepts, the impact of Containerization across the entire shipping spectrum, including handling techniques and greatly increased terminal requirements, physical and financial, have generated a significant investment by both the private and public sector in the continued efficient movement of water transportation.

The economic impact of water transportation throughout the area served by this vast network of ports and terminals is most significant.

Several river port communities have prepared comprehensive studies along these lines.

One study most recently completed for the area of St. Louis, Mo., reveals a water transportation impact of 45,000 jobs generated with an annual payroll of well over \$400 million.

The Port of Louisville, Ky., much smaller in size attributes some \$588 million in wages and salaries to the impact of water transportation.

Greenville, Miss., less than 50,000 in population, has a water oriented economy representing 10,000 jobs and over \$90 million annual payroll.

This impact of annual wages and salaries alone represents an average of \$28 for each ton of waterborne cargo moved through these ports.

Multiply this average figure by the total tonnage moving on the Mississippi River system through the river ports north of Baton Rouge ( $122,000,000 \times 28$ ) and the economic impact to this Mid-Continent area alone is well over 3 billion dollars a year in wages and salaries.

These statistics are presented to illustrate the magnitude and vital importance of the stake our Nation, as the major beneficiary, and the taxpayers who foot the bill have in the continued growth and efficiency of our inland waterway system.

Despite the vital importance of the continued healthy growth of this sector of our Nation's economy, there are forces at work threatening to impose upon us a "No Growth" posture and not the least of these forces stems from the Endangered Species Act of 1973.

We have no doubt that this Act was passed by the members of Congress in good faith and righteousness in anticipation of preserving and safeguarding certain threatened species of animals and plants. However, the broad coverage and carte blanche authority given in the provisions of this bill has created a monster which, if left unbridled, will wreak havoc with our economy and entire way of life.

The zeal with which certain environmental groups have taken advantage of the provisions of this Act is well illustrated by their successful efforts in closing down major projects and preventing initiation and progress on others. It has reached the point where anyone desiring to oppose a project can do so by simply calling on the friendly ecologist who searches the sight and comes up with a species of plant, fish or animal that nobody ever heard of, classes it endangered, and bingo, the project is stopped immediately. The extent to which this has developed in the few short years since the Act was passed can be realized by noting that in 1973 there were 109 endangered species identified and listed. Today this list has grown to over 24,000!

We feel sure that you have already been made well aware of many of the major projects which have been stopped, held up, or threatened, with great dollar loss to the Nation and taxpayer through expensive litigation that is involved in addition to the vast investments in project cost and loss of valuable time and benefits which would otherwise accrue to the public. Further, that this great loss and expense can be forced upon the taxpayer without any responsibility whatever on the part of the ecologist and his supporters who may operate under the present law with complete abandon and irresponsibility.

Our primary purpose here is to respectfully recommend that immediate action be taken to amend the present law to correct for these deficiencies. Those persons, organizations and their supporters who seek to use the provision of the Act to impose great economic loss upon others should be held responsible for their acts just as everyone else in all walks of our society. They should be held to conform and be subject to the same procedures required of others who desire to expend public funds

for a worthy cause by providing clear evidence of the economic impact of their actions both short and long term on jobs, payrolls, and other human considerations demanded of an expanding society.

We cannot conceive of our elected officials continuing to permit such losses of the taxpayers money while professing to combat inflation, solve the energy problem, and fight unemployment.

Thank you very much for this opportunity to comment.

Mr. LEGGETT. The meeting will stand adjourned at this point until next Tuesday morning, when hopefully we will finish this phase of our testimony.

[Whereupon, at 4:07 p.m., the subcommittee adjourned.]

# ENDANGERED SPECIES OVERSIGHT

WEDNESDAY, JUNE 28, 1978

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON FISHERIES AND WILDLIFE  
CONSERVATION AND THE ENVIRONMENT OF THE  
COMMITTEE ON MERCHANT MARINE AND FISHERIES,  
*Washington, D.C.*

The subcommittee met, pursuant to notice, at 10 a.m., in room 1334, Longworth House Office Building, Hon. Robert L. Leggett (chairman of the subcommittee) presiding.

Present: Representatives Leggett, Forsythe, Dingell, Hughes, and de la Garza.

Also present: Robert Thornton, majority counsel; Charles Bedell, deputy minority counsel; and Michael Ingrao, majority research assistant.

Mr. LEGGETT. The meeting of the subcommittee will please come to order. We have a limited amount of time today, so we would like to bring to a close these important hearings on the administration of the Endangered Species Act. We have asked the Fish and Wildlife Service to return today to respond to a number of specific questions that have been raised during the course of these hearings. I understand that the Fish and Wildlife Service witnesses have reviewed the transcript of these hearings and have developed a response to many of the issues raised over the last several weeks.

We have an additional witness, Mr. Donald Simpson, whose testimony I understand will be short. If there is no objection, we will hear from Mr. Simpson.

Do you have a prepared statement?

## STATEMENT OF DONALD SIMPSON, PACIFIC LEGAL FOUNDATION

Mr. SIMPSON. Yes, sir.

Mr. LEGGETT. That will be included in the record as though you read it.

Mr. SIMPSON. Thank you.

We have from time to time been involved in a number of cases relating to endangered species. The construction of the Columbia Dam on the Duck River illustrates several of the problems of particular concern. Most of the information on this project discussed below can be found in the files of the Interior Department, Fish and Wildlife Service.

The Columbia Dam project is a vital flood control and irrigation project on the upper Duck River which was entered into by four counties and the Tennessee Valley Authority. The listing of mol-

lucks as endangered was seen by some as a key to stopping growth along stretches of the Duck and other eastern rivers. In January 1974 the Fish and Wildlife Service—FWS—publicly described the Columbia Dam area as a critical habitat for mussels and snails, although the first studies commissioned by FWS would not be completed for 2½ more years. The determination to list was made by a small group of experts. Members of the general public were not consulted. Requests by individuals for public hearings were ignored. FWS used novel and inaccurate scientific names which further limited public participation because of difficulty in conducting a literature search. Even FWS recognized that the novel nomenclature would not permit adequate comments by the affected States, but failed to change its practice. The tan riffle shell is typical of mollusks listed by this process as endangered species.

According to the Federal Register notice of intent to place the tan riffle shell on the endangered species list, this freshwater mussel is threatened by construction of dams on the Duck and Clinch Rivers in Tennessee. The Federal Register notice also contains the negative assessment that no environmental impact statement—EIS—is needed because the listing does not impact on the environment. Since an EIS had been essential for the construction of the Duck River dams, it would seem that anything which stopped the construction, and thus stopped the flood control and water conservation which the dams would provide, would also exert significant impact on the environment.

Investigation established that the dam was overwhelmingly approved and desired by the people in the area. Persons in New York City, however, with a long history of concern for dams in other people's areas, had been threatening the Tennessee Valley Authority—TVA—with the structures of the Endangered Species Act if they did not cease and desist the dam construction. Pacific Legal Foundation believed that the people of Tennessee should not be deprived of the benefit of this public works project, and the congressional intent frustrated, without a full balancing of the risks and benefits. Accordingly, on December 6, 1977, Pacific Legal Foundation filed suit in the U.S. District Court in Columbia, Tenn., to enjoin implementation of the act and the listing of any aquatic creatures in the Duck River as endangered until such time as a full environmental impact statement, as required by the National Environmental Policy Act—NEPA—has been filed by the Department of the Interior.

This is an important fact. It is just an opportunity to comment without necessarily an opportunity to have available and to comment on the input of others. It is a general summary appearing in the Federal Register; it is a notice. You file your comments; there is no interaction with the public after that time.

On the other hand, NEPA is a full-disclosure law designed to inform the Congress, the public and the decisionmakers of the environmental consequences of agency actions. Moreover, NEPA forces the agency initiating action to consider alternatives to the action proposed. Consultation with the public is required. The procedural requirements of NEPA, if applied to the situation in the Duck River, will end the closed process now taking place. The listing of the mollusks and the available alternatives will be sub-

jected to open discussion. The net effect will be to reduce the suspicion the public now holds for the Endangered Species Act and to permit more informed decisions regarding the resources in the Duck River.

Frankly, we are concerned as to the public's fear of the act because we could not feel they are being brought into the process fully. We have belief the NEPA will possibly strengthen the act, in the sense you will not have a public outcry against it if they feel it has been given a fair shake.

A second problem in the Duck River is the failure to list all the species believed to be endangered. Thus, several varieties of snails are waiting in the wings for their moment on center stage. Should the tan riffle shell, the orange-footed pimpleback, the Cumberland monkeyface, and the other mussels prove to be plentiful rather than endangered, then the snails can be marched out and listed, and again the Columbia River Dam will be jeopardized. Congress has authorized the project, and appropriations for it. People who have brought all their arguments against the various projects have been here before Congress. They lost, they were rejected, by the Congress, so they are now taking alternative routes to block congressional intent and the public interest in these areas.

The Tellico process, it is something to look at. It was a David-Goliath situation. In fact, it could also be looked at as a bunch of people who lost, trying to defeat the project they previously lost on; and frustrating the Appropriations Committee and other acts of Congress supporting it.

We also have a tendency to give TVA a black eye in this. I think we should take a look at it from TVA's standpoint and note they did have congressional mandates to proceed and had they not done so, they would have been highly criticized for failing to comply.

Much has been said about the consultation process of section 7 of the act. Frankly, the Duck River case and others show this to be only a diversion. Subsection (g)(1) of 16 U.S.C. 1540 (section 11 of the act) permits citizen suits to enjoin alleged violations of the act irrespective of whether there has been a consultation. Pursuant to this provision, individuals threatened legal actions to enjoin construction of the Columbia Dam despite its clear environmental benefits, flood control and water conservation, and despite the overwhelming support by the residents in the vicinity of this Tennessee dam. This pattern had been observed in many cases in which the Fish and Wildlife Service (FWS) list species as endangered and this action is promptly followed by threats of civil action from no-growth advocates outside Interior. At present, only capitulation, not consultation, will remove these threats of suit. Interior is quick to criticize TVA and other Federal agencies for what Interior describes as a failure to consult. If Interior would consult with the public in its listing process at least to the same extent that TVA consulted with Congress, the public, and Interior concerning the snail darter, much of the criticism of the listing process might be avoided.

It is understood the consultation process has resolved all the situations except Tellico. Suppose, for instance, the Interior Department and the TVA had a consultation and they agreed that the transplantation is the appropriate route to go. Unless they trans-

plant all the snail darters, then there are still snail darters which could not be taken, harassed or any of the other actions forbidden, and the opportunity for suits by citizens to block the progress from going ahead will still exist. There is no limitation in the process.

Take a case such as the Houston toad. As a frustration of the process, it is still outstanding. In the Houston toad case, there is a listing hanging in a state of limbo while various consultations and studies are continued. There seems to be no end to the critical habitat studies of the Houston toad, yet landowners in the area cannot use or build their property or develop it for fear they will end up in a Tellico situation, while there is a severe impediment to the landowners who continue to pay taxes on the land, but are unable to use or develop the land.

Another very serious problem with the Endangered Species Act is in the identification of the species. It is very nice to talk about wiping out the species. This should not be done in a relaxed manner. On the other hand, the Act does not take remedies as to species, subspecies and lower taxa. I have given the example in a somewhat frivolous and yet serious vein of the White House mouse which have reproduced in a local area, and undoubtedly there are lower taxa in those quarters. Should we now ban the cleaning up of the White House mice because they are living in a critical habitat?

We have the resistant staphylococcus residing in hospitals. Do we say they should not be wiped out because they are a lower species of staphylococcus which live in a restricted habitat, and should be protected?

While we are on the subject of lower taxa, the snail darter, as I understand it, is described as a species—I think it is described biologically as a species, not just in law. Yet Dr. Ettner acknowledged that he cannot tell varieties of these species apart except by using a bisecting microscope. At what level do we start in on the lower taxa?

There is also going to be a problem that sooner or later the Congress is going to have to face a conflict. I think probably you have heard of the wound fin minnow of Utah living in a salt spring running into the Colorado, and will be impacted in a desalination act in agreement with Mexico. On May 30 another occurrence of this type has arisen involving PCF. You will find the Los Angeles Hyperion treatment plant, which discharges sludge 5 miles out into the sea. This plant has been under consideration by EPA to alter its operations to reduce the sludge. Nevertheless, five major species depend on that sludge as a part of its food chain.

Specifically, there are the California brown pelican, the California grey whale, El Segundo ———, unarmored ———, and the lightfoot lapper rail. All in some form are impacted by that sewage sludge discharge.

There has been a whole biomass system which EPA has acknowledged in their environmental statement. Notice has been given to the Secretary of the Interior, to the director of Fish and Wildlife Service, and the Administrator of EPA on May 26, 1978, of the conflict and notice that they take appropriate actions to resolve the conflicts.

We can look even closer at home to the Washington, D.C., scud, which may indeed depend on discharge of sludge to Rock Creek.

Are we in a position to say we want that to continue for the benefit of the scud? These are only some of the conflicts arising which require a closer look at the administration of the Endangered Species Act.

Section 9 of the act forbids taking; section 3 defines taking as harassing; section 11 provides for citizens suits to enjoin any violation of the act which permits the individuals themselves to take the action with or without consultation between Federal agencies.

I would also like to quote from a biologist who has decided what his concerns are for the relative importance of people and species in the country. Thus in one record the statement was made:

Present plans to improve the economic life of the people of Appalachia could easily destroy what remains of this rare heritage on the Clinch River.

Frankly, a higher degree of concern needs to be given to the people of Appalachia than this would indicate.

[The complete statement follows:]

#### STATEMENT OF DONALD SIMPSON

Did Congress, in passing the Endangered Species Act, intend to give Interior and private citizens a virtual veto power over public work projects which Congress finds to be in the public interest? Interior reads "consultation" in Section 7 of the Act to mean concurrence with Interior. The Supreme Court affirmed the Sixth Circuit Court of Appeals holding in the *Tellico* case that injunction is mandatory where there has been a violation of the Act as to any listed species.

Accordingly, it is easy to target a project, identify and list an allegedly endangered species and stop the project either through the Interior's "consultation" process or by court injunction. The needs of the impoverished or unemployed, the need for flood control and water conservation along the Duck River, the needs of national defense, the need for energy development, and a multitude of other public benefits need not be considered in the termination of Congressionally authorized and funded projects. The levels of agency concern for people and their needs relative to the concern for mollusks is, perhaps, best demonstrated by the memorandum statement of one biologist: "Present plans to improve economic life of the people of Appalachia \* \* \* could easily destroy what little remains of this rare heritage."

Actions on the Cahaba River of Alabama demonstrate the scope of misuse of the protective statutes. Opponents of growth attempted to have EPA declare the river too polluted to permit further effluent discharges. EPA found, however, that the river was capable of accepting additional effluent without significant impact on water quality or public health. Accordingly, the no-growth proponents attempted to have the river listed as wild and scenic. This also failed—perhaps because the river passed through the center of Birmingham. Then, the no-growth proponents hit upon the Endangered Species Act. Two species are proposed for inclusion on the endangered list. It appears, however, that this position is unsupportable. Recent information indicates there is now a diligent search for historic sites for preservation along the Cahaba River.

A different deficiency in the Endangered Species Act and a different method by which the public may be harassed is illustrated by the Houston Toad case. The inclusion of a shopping mall as part of the toad's critical habitat can, of course, be written off as simply an administrative error. The failure to reach a conclusion as to the critical habitat, however, is seriously injuring property values. A first study on the critical habitat was set aside because of error. A second study was inconclusive. A third is now underway. In the meantime, persons owning property are fearful to commit funds to its improvement for fear that they will find themselves in the *Tellico*-like situation of being unable to get use permits for completed projects. No one is willing to buy the property until the problem is resolved. And so, the studies go on while the property owners are helpless. If the third study is inconclusive, can Interior undertake a fourth study and a fifth study, and so forth until the property owner is forced to let the property go for taxes? The Endangered Species Act places no limitation on this kind of activity by Interior.

The Houston Toad case is particularly irritating because it may be disappearing as a result of its own nature and not the activities of man. The toad has a significant proclivity for mating with any available species of toad, particularly the

Gulf Toad, to produce off-spring that no longer bear the Houston Toad's more significant physical characteristics. Should interior impose its standards on the Houston Toad? Should they eliminate the Gulf Toad from the Houston habitat? Should the misbegotten off-spring themselves be protected as the carrier of the Houston Toad's recessive genetic characteristics? Similar natural evolutionary changes are occurring in other animals, e.g. the interbreeding of certain species of wolves is leading to the disappearance of a protected species. A number of mollusk species in the Duck River, supposedly threatened by dam construction, have already disappeared from one of Tennessee's rivers, the Buffalo, even though this river is protected as a wild and scenic river and is free from dam construction. Do Congress and Interior view themselves as modern King Canutes attempting to hold back the tide of evolution? The public is not served when their appointed decision makers allow themselves and the law to become the subject of ridicule.

The dilemma of dealing in absolutes instead of using risk-benefit analysis to arrive at a balanced public interest is easily shown. At the base of the Tellico Dam are several varieties of snails, at least one of which is threatened. If preservation of the Snail Darter which feeds on snails endangers the threatened snail, must preservation of the Snail Darter cease? What if the prime food of the threatened snail is an endangered aquatic plant?

According to recent newspaper accounts, for over twenty years mice have been a problem in the White House and steps are being taken to trap and remove them. However, after twenty years of interbreeding in an isolated location such as the White House, it is probable that unique "subspecies" or "lower taxa" have developed for which the White House is a critical habitat. Should the extermination of these unique mice be enjoined? Might not the preservation of these creatures in their national historic site serve as a continuing reminder of this country's dedication to endangered species?

On a far more serious level, what should be Interior's action when an aquatic species is found which depends for survival on acid runoff from an open strip mine or depends on the thermal discharge from power projects? At this moment, five listed endangered species including the peregrine falcon, the California brown pelican and the California grey whale are known to depend, in one habitat, on the ecosystem which has developed around sludge discharge off the Pacific Sea Coast. The Environmental Protection Agency projects that from one-third to one-half of the biomass in the system would be eliminated if the sludge dumping is stopped. What actions are permitted to EPA under the Federal Water Pollution Control Act (FWPCA) to deal with this sludge-based ecosystem?

The abuse of worthwhile protective laws for purposes which defeat the interests and concerns of the majority of the affected people will ultimately lead to the demise of these laws. Pacific Legal Foundation favors a strong but reasonable Endangered Species Act which is administered for the total public interest. Unemployment problems in Appalachia must be weighed against the value of the Orange Footed Pimpleback. The disaster of floods must be weighed against the Tan Riffle Shell's dislike of slow moving waters. The advantages of water storage for people must be weighed against the advantages of drought to the Cumberland Monkeyback. Interior must learn to consult with the people in listing a species if it is to be allowed to compel other agencies to consult about a listed species. Citizen suits should not be permitted before there is full public evaluation such as that NEPA provides. If the people as a whole are not brought back into the decision making process concerning both the listing of the species and the identification of its critical habitat, there is risk that public reaction to the Endangered Species Act will lead to the throwing out of its good parts as well as its bad.

Mr. LEGGETT. I have read your statement and I think your insights will be helpful to the subcommittee.

Who supports your foundation?

Mr. SIMPSON. Corporations, foundations, individuals——

Mr. LEGGETT. Any Federal money?

Mr. SIMPSON. No.

Mr. LEGGETT. So, no Sierra Club money?

Mr. SIMPSON. No.

Mr. LEGGETT. So you would have a corporate bias.

Mr. SIMPSON. No; we have certain built-in safeguards. We do not accept funding in excess of 1 percent of our annual budget from any individual or group. We also have a policy of trustees who are



not paid. Any case we get involved in must be cleared before we can bring another. We have certain other limitations. We do not accept funding from any individual or group who has a direct relationship with any case we are involved in.

We like to think we have built-in safeguards against that bias.

Mr. LEGGETT. What happened to the lawsuit you filed last December?

Mr. SIMPSON. That is still in the discovery stage. We have gotten a reply, but it has not yet gone to trial.

Mr. LEGGETT. You are talking about the Houston toad. We have had that before the subcommittee. You indicate that the second study has taken place, the third study is taking place, and a fourth and fifth study may be forthcoming.

Mr. SIMPSON. There is no limit in the act, and it continually keeps that cloud over the people of the area. Where there is that bar, nevertheless, their property is impacted, and they must continue to pay taxes on it.

Mr. LEGGETT. Since you are so familiar with the act, have you come up with any simple amendments to accomplish reasonable growth plus nonharassing suits?

Mr. SIMPSON. We are a 501(c)(3) organization, so we have to be very careful in that respect. We have considered some of our own, but we are reluctant to state them.

Mr. LEGGETT. It is really quite easy to draft a bill, you know.

Mr. SIMPSON. I would like to again express my real concern. We have never attacked the act itself. We are very concerned as to the way it is administered. We think undue administration of the act will result in people being opposed to it.

Mr. LEGGETT. I do not think there has been undue administration of the act. There has been undue publication of a few cases. Now, the Department of Defense allegedly was threatened. We brought them up here and they had a full opportunity to express themselves. We were talking with people who have been with DOD for a long while, and they indicated they did not feel pushed against the wall.

Mr. SIMPSON. You are still dealing with the section 7 provisions. I am concerned with the provisions affecting the citizens, the landowners; and they are not part of that consultation.

Mr. LEGGETT. I think it is your suggestion that the public be consulted or that public hearings be, in fact, open. We should get a wide spectrum of public input at the time species are listed. That is a good suggestion. I am not positive that has occurred in the past.

Mr. SIMPSON. There has never been an impact statement filed on endangered species.

Mr. LEGGETT. What bothers me, is that under existing law, if we have a 2-percent interface with an endangered specie and a construction project, which we are unable to resolve by consultation, there is no flexibility in the act to compromise that 2 percent. If the agency thinks it is unreasonable to move forward in light of the 2-percent overlap, a citizens' suit can intervene at any point and theoretically produce a Tellico result.

Again, I want to reiterate, this subcommittee has taken no position at this point on the merits of the Tellico project, because even,

at this late date, we have not been presented with complete information on that situation.

Counsel, have you any questions? Mr. Thornton.

Mr. THORNTON. I take it that the point of your allegation in your litigation is the fact that the EIS is required for listing of species.

Mr. SIMPSON. Yes.

Mr. THORNTON. Did your litigation include habitat?

Mr. SIMPSON. It would include both.

Mr. THORNTON. If that is the case, do you see any need for congressional action along that line?

Mr. SIMPSON. Not if we are successful.

Mr. THORNTON. Was your lawsuit to require an EIS?

Mr. SIMPSON. Yes; we feel NEPA requires it. There is a disagreement with Interior. If we should lose on that——

Mr. LEGGETT. Mr. Bedell, any questions?

Mr. BEDELL. No.

Mr. LEGGETT. Thank you, Mr. Simpson.

Next we will have the representatives from the Fish and Wildlife Service Mr. Greenwalt and Mr. Schreiner.

Lynn, do you wish to make a statement?

**STATEMENT OF LYNN A. GREENWALT, DIRECTOR, FISH AND WILDLIFE SERVICE, ACCOMPANIED BY KEITH M. SCHREINER, ASSOCIATE DIRECTOR, FEDERAL ASSISTANCE, FISH AND WILDLIFE SERVICE**

Mr. GREENWALT. No, sir, our statement is in the record from the carrier hearing and you have a copy of our response to issues raised by other witnesses. The most profitable thing we can do is to answer any questions you may have.

Mr. LEGGETT. Let me ask you, according to a discussion I had with Secretary Herbst, he was going to consult with the chairman of TVA with respect to certain alternatives; then he was going to report back to me. I have never heard back from him, and I do not know what he discussed.

I saw that the Chairman of TVA had ordered discussions as to certain alternatives down in the project area, and there was a degree of local turmoil. Are you able to go over those various alternatives at this point?

Mr. GREENWALT. Mr. Chairman, I can tell you what the Assistant Secretary and Mr. Freeman, the Chairman of the Board of Directors at TVA have done.

One of the first things Mr. Herbst did was assign a group of people to assist him in this. These happen to be myself, Keith Schreiner, and Eugene Hester who is in charge of the research function of the Service. The object is to ascertain how best to approach the identification and analysis of alternatives which would comply with the Endangered Species Act, particularly in light of the Supreme Court decision.

We have met on one occasion thus far in Knoxville Tenn., with representatives of TVA, and discussed in the biological sense some of the things which should be considered as the consultation progresses. In the meantime, Mr. Freeman and Mr. Herbst went afield and visited with the public at three different locations and learned their feelings as to the continuation of the Tellico project.

The two cochairmen of the group, Mr. Freeman and Mr. Herbst, have decided that we meet weekly until we have prepared a report to be submitted to the cochairmen and Congress on July 10. We will be meeting on Friday to continue the discussions.

The alternatives have been framed.

I have not been privy to any decision reached by the cochairmen. We of the service are working on the analysis the two cochairmen have asked for. The Fish and Wildlife Service has been asked to determine what courses of action could be taken to assure the existence of the snail darter.

In addition, there have is some economic and other analyses being done by TVA in connection with alternative uses of the Tellico project. Mr. Freeman referred to these, perhaps, obliquely, during his appearance here.

The final report to the Congress will identify clearly the kind of action that TVA, which has the choice to make in this case, proposes to follow.

Mr. LEGGETT. How much staff does TVA have and how much does your agency have devoted to the program?

Mr. GREENWALT. At the moment the TVA staff effort outnumbered ours. I have no idea how many are involved in the analytical work for which they have assumed the responsibility. Within the Service, at the present, there are the three I have named, along with two or three other people. This number may be enlarged as we get into greater detail.

Mr. LEGGETT. What are your views with respect to the listing of the alleged several hundred vertebrates, and insects, and a couple thousand-some plants? Are you prepared to take a position today? Are those listings probably going to occur? Have you developed potential habitat for any of those areas? Do you develop habitat prior to the time you list? And where are we going with this act in its current form?

Mr. GREENWALT. That is a wide-ranging question, Mr. Chairman. Let me say this. There will be a great many species listed. That goes without saying, because there are a great many species, both of plants and animals, which qualify under the act. How many? I cannot say. I can tell you that none will be listed unless they meet the standards of the act; unless the information presently available supports their listing. As you know, Mr. Chairman, the Service, acting for the Secretary and working with the Department of Commerce, establishes its own set of priorities in terms of how we should approach listing species. This priority approach is subject to interruption by public petition. So our otherwise orderly process is sometimes interrupted by the petitioning process. This is not all bad, because frequently the petitioners provide information we might not otherwise be able to obtain readily, and more importantly frequently surface concerns which are of an emergency nature; that is, they will petition the service to have a species listed which is, in reality, subject to extinction. Petitions must be supported by sound biological information before we are obliged to follow through with them. Unless the petitioner provides substantive information, we do not accept the petition.

Mr. LEGGETT. How many people do you have working full time on threatened and endangered species?

Mr. GREENWALT. In the whole of the program, which includes a great many other things other than listing, about 198 people, not all being professional-level people.

Mr. LEGGETT. How many are professional?

Mr. GREENWALT. About 100 of them.

Mr. LEGGETT. Do they spend all of their time on endangered species?

Mr. GREENWALT. These are people who carry out the whole gamut of activities within the endangered species program.

Mr. LEGGETT. My question, though, is how many do you have who are devoting all of their time to handling the listing of species and establishing of critical habitat of these species?

Mr. GREENWALT. Seven professionals and three nonprofessionals; 10 people who devote their full time to the listing process.

Mr. LEGGETT. Does that include Mr. Schreiner?

Mr. GREENWALT. Not full time; no, sir.

Mr. LEGGETT. So you have three secretary types?

Mr. GREENWALT. Yes, that is the case with regard to listing.

Mr. LEGGETT. How many species did they list during calendar year 1977?

Mr. SCHREINER. I am not sure as to the number of listings during calendar 1977, but it was much less than 100. Our capability, though, is certainly not much more than 200 a year under the best of circumstances.

Mr. LEGGETT. How many acres of critical habitat did you designate in 1977?

Mr. SCHREINER. I believe we established about 16 critical habitats during 1977. I do not have the acreage involved. I would be glad to supply it for the record.

Mr. LEGGETT. Have you an approximation?

Mr. SCHREINER. I would guess several thousand acres.

Mr. LEGGETT. Were those mostly in particular States?

Mr. SCHREINER. Yes, sir, the critical habitats would have been for particular species and in particular States for the most part.

I can get you the exact list. We may have it here, if you would like it for the record now.

Mr. LEGGETT. How many species have you listed this year?

Mr. SCHREINER. In 1978 approximately 19 species have been listed.

I will to supply that information for the record.

[The information follows:]

## CRITICAL HABITAT FINALIZED

| Species                                | Date of Federal Register | Estimated Total<br>Acres <del>10<sup>3</sup></del> (1000's) | Number<br>Areas | Notes |
|--|--------------------------|---|-----------------|-------|
| Snail darter                           | 04/01/76                 | 1.3   | 1               |       |
| Florida manatee                        | 09/24/76                 | 950   | 16              | 1     |
| Indiana bat                            | 09/24/76                 | N/A   | 13              | 2     |
| American crocodile                     | 09/24/76                 | 960   | 1               |       |
| California condor                      | 09/24/76                 | 556   | 9               |       |
| Yellow-shouldered blackbird            | 11/19/76                 | 22  | 1               | 3     |
| St. Croix lizard                       | 06/03/77                 | .015  | 1               |       |
| Giant anole                            | 07/21/77                 | 1.6   | 1               |       |
| Mississippi sandhill crane             | 08/08/77                 | 25  | 3               |       |
| Everglade kite                         | 08/11/77                 | 963   | 9               |       |
| American Peregrine falcon (California) | 08/11/77                 | 12  | 5               |       |
| Cape Sable seaside sparrow             | 08/11/77                 | 271   | 4               |       |
| Dusky seaside sparrow                  | 08/11/77                 | 90  | 2               |       |
| Morro Bay kangaroo rat                 | 08/11/77                 | 0.8   | 1               |       |
| Palila                                 | 08/11/77                 | 77  | 1               |       |
| Alabama cavefish                       | 09/09/77                 | N/A   | 1               | 2     |
| Slackwater darter                      | 09/09/77                 | 20  | 2               |       |
| Slender chub                           | 09/09/77                 | 22  | 2               |       |
| Spotfin chub                           | 09/09/77                 | 186   | 3               |       |
| Yellowfin madtom                       | 09/09/77                 | 30  | 2               |       |
| Florida Pine Barrens treefrog          | 11/11/77                 | 1.1   | 6               |       |
| Golden coqui                           | 11/11/77                 | 7.5   | 3               |       |
| Leopard darter                         | 01/27/78                 | 8.0   | 3               | 4     |
| Houston toad                           | 01/31/78                 | 83  | 2               |       |
| Mona boa                               | 02/03/78                 | 22  | 1               | 3     |
| Mona ground iguana                     | 02/03/78                 | 22  | 1               | 3     |
| Gray wolf                              | 03/09/78                 | 4,600   | 4               |       |
| Little Kern golden trout               | 04/13/78                 | 36  | 1               |       |
| Whooping crane                         | 05/15/78                 | 365   | 9               |       |
|  | TOTAL                    | 9,332   | 108             |       |

- NOTES:
1. Estimate subject to 30 percent error, either direction
  2. Caves, no estimate made of area
  3. (Mona Island, P.R.) all three species have same Critical Habitat
  4. Actual Critical Habitat is described as River or stream course, no actual area stated (Estimated River miles converted to acres)

## LISTINGS - U.S. ENDANGERED SPECIES PROGRAM

|                 | ENDANGERED SPECIES |            |                 |              |             | THREATENED SPECIES |            |                 |              |             | TOTALS     |            |                 |              |        |
|-----------------|--------------------|------------|-----------------|--------------|-------------|--------------------|------------|-----------------|--------------|-------------|------------|------------|-----------------|--------------|--------|
|                 | Pre - 1977         | Added 1977 | Added to 7/1/78 | Rest of 1978 | Sub - Total | Pre - 1977         | Added 1977 | Added to 7/1/78 | Rest of 1978 | Sub - Total | Pre - 1977 | Added 1977 | Added to 7/1/78 | Rest of 1978 | TOTALS |
| NATIVE SPECIES  | 172                | 10         | 8               | 98*          | 288         | 9                  | 11         | 10              | 130          | 160         | 181        | 21         | 18              | 228          | 440    |
| FOREIGN SPECIES | 439                | 0          | 0               | 31           | 470         | 17                 | 0          | 1               | 0            | 18          | 456        | 0          | 1               | 31           | 487    |
| TOTALS          | 611                | 10         | 8               | 129          | 758         | 26                 | 11         | 11              | 130          | 178         | 637        | 21         | 19              | 259          | 936    |

\* Does not account for 1 fish and 2 birds (Natives) which might be removed from list because of extinction or reevaluation of status.

7/1/78

Mr. LEGGETT. Essentially what is the job of the seven full-time professional people?

Mr. SCHREINER. The first thing they do is accumulate the data necessary to determine the status of the species. This may occur in several ways, Mr. Chairman. It may occur through a contract which we let with experts in the area of concern to supply us with the data. It may occur through a thorough literature search; oftentimes the data is already available to base a decision on. In almost all cases, it will mean contacting the known experts throughout the world. So, actually it is a combination of contracts, literature searching, and communications directly with the experts on the species.

After the data is received, the staff prepares the NEPA document and State Governors are contacted and a proposal is published in the Federal Register. There is a 90-day period for State Governors to respond and 60-day period for others. During this period public hearings may be held if they are requested and the Secretary grants them. This happens frequently.

Mr. LEGGETT. I understand that sometimes you mix the designation of the critical habitat with the listing.

Mr. SCHREINER. It is our policy to do them simultaneously.

Mr. LEGGETT. How long has that been your policy?

Mr. SCHREINER. Approximately a year now, sir.

Mr. LEGGETT. Then, where do you hold the public hearing?

Mr. SCHREINER. Frequently it will be in several places. If it is a species of a general listing or of general interest across the United States, we will hold them in several places across the United States. If it is an action of primary interest in a local area only, then the chances are the hearings will be held in just that area.

Mr. LEGGETT. You indicate you go through a NEPA process.

Mr. SCHREINER. Yes.

Mr. LEGGETT. How long have you been doing that?

Mr. SCHREINER. Since the act was passed.

Mr. LEGGETT. On the TVA case, which was considered earlier, did you go through the NEPA process on that?

Mr. SCHREINER. Yes.

Mr. LEGGETT. Was the Governor consulted at the time of the listing of the snail darter?

Mr. SCHREINER. Yes, sir, that is required by law. He was consulted officially at the time the proposal was made. But his people, his experts, were contacted many times long before that, as early as the fall of 1974.

Mr. LEGGETT. At the time of the designation of the critical habitat, was he consulted?

Mr. SCHREINER. Yes, sir, he is always consulted.

Mr. LEGGETT. What form does that consultation take?

Mr. SCHREINER. We write him a letter as to our proposal, actually send him a copy of the proposal, ask him for his comments, and he is notified he will be given at least 90 days, because that is what the law says, Mr. Chairman.

Mr. LEGGETT. Did you receive any reply from him in that case?

Mr. SCHREINER. We are talking about the snail darter now?

Mr. LEGGETT. Yes.

Mr. SCHREINER. Yes; we did. In that particular case we asked him for approval to go ahead with an emergency designation. I believe he denied us that approval, and he later sent comments which I believe were generally opposed to the listing of the species.

Mr. LEGGETT. Do you have copies of your correspondence with that Governor?

Mr. SCHREINER. Yes.

Mr. LEGGETT. Will you provide the subcommittee copies?

Mr. SCHREINER. Yes, sir.

[The information follows:]

FEBRUARY 20, 1975.

Re: Classification of Snail Darter as an Endangered Species.

Hon. RAY BLANTON,  
Governor of Tennessee,  
State Capitol Building, Nashville, Tenn.

DEAR GOVERNOR BLANTON: In the near future you will receive notification from the U.S. Department of Interior in Washington indicating they have approved the nomination of the snail darter, *Percina (Imostoma) sp.*, for endangered species status under the provisions of Public Law 93-205. The snail darter is found only in the lower Little Tennessee River of East Tennessee.

The Secretary of Interior may make additions to the list of endangered species after a period of 90 days is made available for each State to comment beginning from the date of notification to the concerned governor(s) and publication in the Federal Register. However, an emergency listing for 120 days can be made by agreement between the Secretary of Interior and the concerned governor(s). The secretary can declare a permanent listing after the 90-day review period.

Since our agency has statutory responsibilities for all wildlife (including fish) within the state, we are herein submitting additional information and recommendations concerning the snail darter for your consideration. State responsibilities are defined in the "Wildlife Resources Act of 1974"; the "Tennessee Nongame and Endangered or Threatened Wildlife Species Conservation Act of 1974"; and Public Law 93-205, which states, "The purposes of this Act are to provide a means whereby the ecosystems upon which endangered \* \* \* species depend, may be conserved \* \* \*."

According to the "Wildlife Resources Act of 1974", "It is hereby declared to be the policy of the State of Tennessee, and the intent of the General Assembly, that the wildlife \* \* \* and their environment shall be preserved, conserved, managed, protected, and enhanced for the use, benefit and enjoyment of the people of this state and visitors to this state \* \* \*. Furthermore, it is declared to do the intent of the act that the policy of the state shall be that the agency shall be non-partisan and shall place first and foremost the welfare of the wildlife and its environment in the agency's planning and decisions".

According to the "Tennessee Nongame and Endangered or Threatened Wildlife Species Conservation Act of 1974", "Species or subspecies which may be found to be endangered within the state should be accorded protection in order to maintain and to the extent possible enhance their numbers".

The enclosed Sections 2 and 3 describe the extremely delicate habitat of the snail darter. It inhabits only certain portions of some gravel shoals between stream miles 5 and 17 of the Little Tennessee River. It confines itself to the swiftest portions of clean shoals in depths between two and three feet. The water is characterized by an almost constant low turbidity and a probable maximum temperature of 20° C (68° F). These and other conditions offer habitat for the gastropod fauna, which is almost the exclusive food for the adult and sub-adult snail darters. At least 43 specimens of this species have been identified by Dr. David Etnier of the University of Tennessee since 1973.

TVA's current construction of the Tellico Dam on the Little Tennessee River would result in the total destruction of habitat now utilized by the snail darter. This dam is scheduled for completion in 1977. A more urgent threat to essential habitat is timber clearance recently initiated by TVA. This creates a potential for siltation for which our personnel are now monitoring. Any significant siltation could result in a loss of vital habitat.

In summary, the snail darter, unique to the Little Tennessee River, is nominated by the Department of Interior as an endangered species. Timber clearance threatens



immediate losses of vital habitat for this species. Completion of the dam would result in total habitat destruction.

In consideration of the urgency of the situation and the State's statutory responsibilities for the protection of endangered species and other unique resources, we recommend concurrence with the Department of Interior and that you give strong consideration to reaching an early agreement with the Secretary of Interior for classification of the snail darter as an endangered species.

Thank you for this opportunity for comment.

Sincerely,

HARVEY BRAY,  
*Executive Director, Tennessee Wildlife Resources Agency.*

OFFICE OF THE SECRETARY,  
*Washington, D.C., March 6, 1978.*

DEAR GOVERNOR BLANTON: The U.S. Fish and Wildlife Service has received a petition (a copy of which is enclosed) to list as "Endangered", pursuant to the Endangered Species Act of 1973 (16 U.S.C. §§ 1531-43) (hereafter, the Act), a newly discovered species of fish—the snail darter, *Percina (Imostoma) sp.*, whose only known range is a portion of the Little Tennessee River. Upon a review of the facts presented in the petition, the Service has determined that the petition presents substantial evidence of the species' endangerment, which evidence warrants a thorough review of its status. Notice to this effect will be published in the Federal Register pursuant to section 4(c)(2) of the Act (16 U.S.C. § 1533(c)(2)). The Service believes that this fish should be listed on an emergency basis as an endangered species pursuant to section 4(f)(2)(B)(ii) of the Act, which allows a regulation with a 120 day duration to take effect upon publication if it responds to an emergency posing a significant risk to the well-being of a species. The Service is of the opinion that the logging operations along the Little Tennessee River may pose such an emergency.

This fish is known only from the Little Tennessee River between miles 5 and 17, in Loudon County, Tennessee. The fish inhabits only portions of clean gravel shoals with cool, swift, low turbidity water. The food of the snail darter is almost exclusively snails which are abundant on the shoals inhabited by the darter. The timber cutting operations which began in January and those that are scheduled in the near future will result in a severe modification of the snail darter's habitat. Specifically, the removal of timber from the watershed may result in increased siltation, covering the shoal bottoms which the darter inhabits, with the result that the darter's food source (snails) could disappear. The siltation of the shoal areas may also reduce and possibly eliminate successful spawning.

The emergency procedure established by section 4(f)(2)(B)(ii) of the Act requires that, in the case of a resident species, the State involved be allowed a 90-day comment period, except to the extent that the period is shortened by agreement between the Governor and the Secretary of the Interior. The primary purpose of this letter is to ask you to agree to a shorter comment period so that the "emergency" listing of this fish can take place as soon as possible. We are hopeful that you will consent to a period of one week or less. The Service feels that the present logging operations in one part of the habitat and imminent logging in the remainder justify this course.

As we note above, any regulation (such as the one herein proposed) promulgated pursuant to section 4(f)(2)(B)(ii) remains in effect for only 120 days following publication, unless the conventional rulemaking procedures are complied with prior to the end of that 120-day period. During this 120-day period, it is our intent to initiate the procedures of the normal listing process to officially determine this fish to be "Endangered." With respect to this conventional listing process you and the public would, of course, have the full 90 days for comment. We are asking only that you agree to shorten the comment period on the 120-day emergency listing, so that protection can be afforded the snail darter immediately, pending a final determination as to "Endangered" status via the conventional rulemaking procedures.

In light of the present precarious situation threatening this species, the Service believes that immediate action is highly desirable.

In addition to other enclosures, I am providing you with a copy of a communication on this matter which I am sending today to Mr. Lynn Seeber, General Manager of the Tennessee Valley Authority—the agency which has authorized the logging operations which threaten the snail darter.

We would appreciate your written response on the emergency listing as soon as possible.

Sincerely yours,

NATHANIEL P. REED,  
Assistant Secretary for Fish and Wildlife and Parks.

STATE OF TENNESSEE,  
EXECUTIVE CHAMBER,  
Nashville, March 24, 1975.

Mr. NATHANIEL REED,  
Assistant Secretary of the Interior for Fish, Wildlife and Parks,  
Office of the Secretary, Washington, D.C.

DEAR SECRETARY REED: Thank you for your recent letter concerning the listing of the snail darter, *Percina imostoma* sp., in an emergency status on the endangered species list of the Endangered Species Act of 1973. I have carefully reviewed your letter and the enclosed material that you have provided for me regarding this matter.

I have also carefully reviewed the current status of this project, and have taken into consideration the several points in your letter regarding the inclusion of the snail darter on the endangered species list. In addition to being personally familiar with this project over the past several years, it does not appear to me, at this time, that the shortening of the ninety day comment period to allow an emergency listing status for the snail darter would be the most beneficial action that could be taken.

It is also my opinion that because of the severe construction delays that this project has endured, and because such a substantial amount of the project has been completed and the large expenditures of monies which have already been invested in this project, that these factors must be taken into consideration relative to any action that would have profound effects on this project.

I am fully aware of the position of the Department of the Interior, and the Fish and Wildlife Service in regard to this matter, and I hope that an early resolution of this question can be made so that the fate of this project can be finally determined.

Thank you for the opportunity to express my feelings on this matter and if I can be of further service to you in this regard, please do not hesitate to contact me.

Sincerely,

RAY BLANTON, Governor.

STATE OF TENNESSEE,  
OFFICE OF URBAN AND FEDERAL AFFAIRS,  
Nashville, Tenn., February 12, 1976.

Mr. LYNN A. GREENWALT,  
Division of Fish and Wildlife Service,  
Washington, D.C.

DEAR MR. GREENWALT: Attached are comments made by the Tennessee Wildlife Resources Agency regarding the proposed rules on Critical Habitat for the Snail Darter published in the *Federal Register* on December 16, 1975, Vol. 40, No. 242, Pg. 58308. We recommend that you give these suggestions appropriate consideration.

Sincerely,

STEPHEN H. NORRIS,  
Grant Review Coordinator.

TENNESSEE WILDLIFE RESOURCES AGENCY,  
ELLINGTON AGRICULTURAL CENTER,  
Nashville, Tenn.

[Memorandum]

To: Steve Norris, Department of Urban and Federal Affairs.

From: Bill Yambert, Nongame Biologist, TWRA.

Date: February 12, 1976.

Regarding proposed determination of critical habitat for the Snail Darter (Fed. Register Vol. 40 No. 242, December 16, 1975)

The TWRA concurs with the critical habitat designation listed in this proposal.

Mr. LEGGETT. Do you have copies of the correspondence with the TVA?

Mr. GREENWALT. Yes, sir.

Mr. LEGGETT. I suppose it would be voluminous, but we would appreciate your providing copies of your correspondence with TVA.

Mr. DINGELL. I have become aware of correspondence between the Interior Department in 1977 and earlier officeholders in TVA which I believe might be illustrative of the earlier attitude of TVA and the rather manifest change in attitude which compares and ranks with the conversion of Saint Paul.

I would suggest it might be useful and ask unanimous consent it be put in the record.

Mr. LEGGETT. If you have the copies, it will be placed in the record with the other materials.

[The information follows:]

DECEMBER 30, 1976.

DEAR MR. SEEGER: As you will recall, consultation sessions under section 7 of the Endangered Species Act were held on December 7-8, 1976, to discuss the Columbia Dam on the Duck River. U.S. Fish and Wildlife Service representatives were distressed to learn that in the month following TVA's request for consultation, the Authority began pouring cement at the Columbia Dam site. By the time of the first consultation sessions, 40 percent of the dam abutments and foundation had been poured. You are literally setting your decisionmaking in concrete, at the estimated cost of \$40,000 per day, and presuming the completion of the Columbia Dam and the flooding of the affected endangered species habitat.

We strongly protest the continued construction of the dam pending the outcome of the consultation process. The process will now proceed expeditiously following the initial meeting earlier this month. In light of the requirements of the Endangered Species Act, construction activities should be suspended pending completion of consultation, which will consider effects of the project on endangered species and, if appropriate, alternative courses of action.

Sincerely yours,

CURTIS BOHLEN,

*Acting Assistant Secretary for Fish and Wildlife and Parks.*

---

TENNESSEE VALLEY AUTHORITY,  
Knoxville, Tenn., January 7, 1977.

Mr. CURTIS BOHLEN,

*Acting Assistant Secretary for Fish and Wildlife and Parks,  
U.S. Department of the Interior, Washington, D.C.*

DEAR MR. BOHLEN: This is in reply to your letter of December 30, 1976, telling TVA to shut down construction of the Columbia Dam portion of its Duck River project pending completion of the consultation process of Section 7 of the Endangered Species Act. It appears to us that your letter in somewhat precipitous in light of the facts of the situation and is certainly contrary to our understanding of the relative responsibilities of TVA and the Department of the Interior regarding the project.

As you know, the Duck River project, consisting of Normandy and Columbia Dams, was approved and funded by Congress in 1969 and construction began in 1972. This is a cooperative undertaking among TVA, local development agencies, and five middle Tennessee municipalities which are dependent upon the project for their future water supply. Work on the Columbia Dam portion of the project began in August 1973 and foundation excavation and preparation for the dam itself began in the fall of 1974. The Normandy Dam was completed some time ago. In our letter of August 13, 1976, to Fish and Wildlife Service Regional Director Kenneth Black, we acknowledged that one of the mussel species listed as endangered on July 14, 1976, is found in the project area (as well as in the Powell and Clinch Rivers) and agreed that early consultation with the Service was appropriate. This consultation process is underway and the Service has been furnished all the information it requested concerning the project and the endangered mussels. While your December 30 letter appears to attribute some special significance to the commencement of concrete pouring in September 1976, the fact is that nothing new is occurring at the project which has any biological significance. This concrete work is simply a normal continuation of construction activities begun several years earlier. According to the

information we have from the Service, a biological opinion is expected in the very near future. We certainly do not view the interim continuation of construction as foreclosing a full and objective consideration of the endangered species question or the Service's biological opinion.

We are troubled by the fact that the position taken in your letter is completely contrary to the respective responsibilities of TVA and Interior under the Act and your own agency's guidelines and policies. We have always understood that it is the responsibility of the program agency to decide the course to be followed by it during and after consultation, not the responsibility of your office to tell them what to do. Your May 20, 1976, guidelines expressly disclaim any intent to "hinder, halt, or preempt actions or statutory requirements of other Federal agencies." This same intent is expressed in the draft regulations transmitted November 11, 1976, which provide that "it is the responsibility of the Federal agency to determine whether to proceed with the activity or program, as planned, in light of its Section 7 obligations." The fact that the agency and not the Fish and Wildlife Service must make such judgments is especially pertinent when the agency's responsibilities to Congress with respect to a congressionally authorized project are taken into account. The Duck River project has been the subject of specific congressional authorization since 1969, including funding after Congress was informed that rare and endangered mussels could be affected by the project. Certainly TVA is in the best position to reconcile the various factors involved, including its continuing responsibilities to Congress, in determining whether construction should proceed in the interim.

In any event, the facts here do not warrant shutdown pending completion of the consultation process. The habitats of the endangered mussels are well removed from the construction site. My staff informs me that state, TVA and Fish and Wildlife biologists present at the December 7-8 consultation meeting are in agreement that the present construction activities pose no interim threat to these mussels. Weighed against the absence of any biological impacts from continuing construction are the substantial adverse economic and human impacts that would——shutting down the project. If we acceded to your request for a suspension of work, it would result in the immediate layoff of 180 construction employees. Assuming a suspension of 3 months, the direct out-of-pocket cost of shutdown, site security, unused equipment, and startup, plus escalation of project costs during this period, would amount to about \$3 million. If work suspension lasted for 12 months, these costs would exceed \$11 million.

While we appreciate your concern about any endangered species being affected by the project, in view of the foregoing we see no justification for taking the drastic action of halting construction during the consultation period.

Sincerely yours,

LYNN SEEBER, *General Manager.*

DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE SECRETARY,  
Washington, D.C., January 21, 1977.

MR. LYNN SEEBER,  
*General Manager, Tennessee Valley Authority,*  
*Knoxville, Tenn.*

DEAR MR. SEEBER: This letter is in response to your January 7, 1977 rejection of our suggestion that you halt construction of the Columbia Dam portion of the Duck River project until our consultation efforts are completed.

No misunderstanding is present between our two agencies as to your ultimate responsibility for deciding the fate of the Columbia Dam in light of your duties under the Endangered Species Act. However, the Department of the Interior is committed to the idea that significant construction activities and investments of project funds should not occur during the consultation process under section 7. Obviously, such actions on your part limit options available to you for complying with section 7.

You agreed last August that consultation was appropriate because of the existence of an endangered species in an area to be impounded by the Columbia Dam. Before consultation could begin, the Authority began pouring cement at the Dam site and at such a pace as to have poured 40 percent of it by the time of the first consultation session. In our judgment, your zealous construction activity seriously questions the sincerity of the consultation that you requested.

We strongly disagree with your suggestion that construction of the Dam is somehow removed from section 7 responsibilities since, allegedly, it is not in and of itself jeopardizing the existence of the subject species. The action being carried out by

TVA, within the meaning of section 7, is the Columbia Dam portion of the Duck River project, including the present construction and ultimate impoundment. You cannot break an activity into its component parts to avoid the proscriptions of the Endangered Species Act.

In consultation with this Department, you are to insure, under section 7, that this project does not jeopardize the continued existence of any listed species. To date, we believe you cannot be so assured, and consultation has not yet been concluded. Nevertheless, the activity has continued unabated, including the dramatic foreclosing of alternatives by the pouring of concrete.

In conclusion, this Department is only interested in the integrity of the consultation process. We stand by our original position that you should have ceased your questionable activity on the Dam project until consultation was ended and you had fully considered all options available to you.

Sincerely yours,

CURTIS BOHLEN,  
Acting Assistant Secretary for Fish and Wildlife and Parks.

FEBRUARY 16, 1977.

Mr. LYNN SEEGER,  
General Manager, TVA,  
Knoxville, Tenn.

DEAR MR. SEEGER: This letter presents the Biological Opinion of the U.S. Fish and Wildlife Service relative to the effects of the Tennessee Valley Authority's Columbia Dam segment of the Duck River Project in Tennessee upon the biological needs of Endangered mollusks inhabiting the Duck River. This opinion is presented in response to the TVA's request for formal consultation pursuant to Section 7 of the Endangered Species Act of 1973. Our Biological Opinion is based upon information available to us as a result of U.S. Fish and Wildlife Service contracted field studies, TVA studies, data submitted by members of the scientific community, and consultation meetings involving personnel of TVA, Tennessee Wildlife Resources Agency and U.S. Fish and Wildlife Service.

It is our Biological Opinion that if the TVA completes the Columbia Dam project as presently planned, the continued existence of the birdwing pearly mussel (*Conradilla caelata*) and the Cumberland monkeyface pearly mussel (*Quadrula intermedia*) will be jeopardized. The impoundment behind the Columbia Dam would completely inundate the only localities where these species are presently known to naturally occur within the Duck River. The impoundment would result in adverse alterations of the chemical, physical, and biological components of the mussels' environment. The extent to which the 49 individuals, transplanted in 1975 to an area below the existing mill dam in Columbia, would be affected by the Columbia Dam has not been determined.

Critical Habitat for the birdwing pearly mussel (*Conradilla caelata*) and the Cumberland monkeyface pearly mussel (*Quadrula intermedia*) has not been proposed at this time. However, as was discussed at the Section 7 consultation meetings, the proposed Columbia Dam project will adversely affect an area which we believe to be essential to the survival of these species and may be determined as Critical Habitat. We intend to propose critical habitat for these species in the near future.

We are appreciative of your agency's cooperation in the consultation process on the Columbia Dam segment of the Duck River project. This Biological Opinion is intended to assist the TVA in meeting its responsibilities under Section 7 of the Act. The decision to accept or reject our opinion, of course, rests with the TVA.

Sincerely yours,

LYNN A. GREENWALT, Director.

Mr. LEGGETT. We have to respond to a rollcall. We will keep the hearing going. Those of us who have not responded can respond, and you can proceed to ask any questions of the witnesses.

Mr. DINGELL. I would like to state I think Mr. Forsythe will respond quite well as chairman.

Mr. Forsythe [presiding]. Gentlemen, I think I would like to proceed with a few questions, pending the chairman's return.

I apologize for not being here during your testimony. I do appreciate the fact that you have picked up on a lot of the issues which have been before us. I would like to explore those a little bit further, and I hope I am not covering ground already covered this morning.

On the issue of who should pay for measures needed to reduce impacts on listed species, is it your feeling that the rules that have been proposed are really a pretty good answer to the problem? I understand that they create a mandate in the rule that the agency responsible for the project has the responsibility to pay for mitigation of its impact.

Mr. GREENWALT. Yes, sir. The precedent is there. It is logically supportive in my judgment and I think it clearly sets forth for the agencies involved the fact that the total accumulated costs attendant upon the consequences of a project should go to that project. I think that has some great merit, also, in the social sense. People have an understanding as to what is at stake and the consequences are available to them in a real way.

Mr. FORSYTHE. I understand there was some discussion as to the use of the EIS procedure under NEPA. It seems to me if we look where we are today, with every substantial impact, that would be a useful tool which should be used to be able to create a better record of the alternative ways of proceeding with projects. The consultation process presumably did this, but it did it behind the scenes and did not ventilate it very well? It did between the agencies, but not as far as the public is concerned.

Mr. GREENWALT. In terms of an EIS in the true sense of a full-blown impact statement, it has to be addressed from the designation of critical habitat and the other from listing of species in my judgment. That is one of the reasons we adopted the policy of trying to designate critical habitat at the same time we list the species, so everyone knows what is at stake. The stability of critical habitat does not trigger a reaction which necessarily triggers a need for a full-blown impact statement. Please understand we comply with NEPA in the sense we develop an EIA, and thus far, the assessment has resulted in a negative declaration. But a full-blown statement is more appropriate when a Federal project comes forward in such a way that it may affect the critical habitat. I believe the appropriate environmental impact assessment process should include the consequences of the project as proposed, including a reference as to how it may be affected by or have an effect upon the critical habitat which has been designated. I think the designation of critical habitat does nothing which triggers the necessity of an EIS prepared by the Fish and Wildlife Service. The thing we both seek is a public understanding of what is at stake in the whole process of listing and delisting and most importantly, the impact of proposed projects, private or public, on the well-being of the species.

The listing of a species is required by the act, given the proper background, the proper information, because the act as it presently stands, and I think ought not to be changed, says it is the policy of this Nation that no species will be allowed to slip into oblivion if we can help it. That is a noble approach. I do not think anyone contemplates changing that. The problem is how we can under-

stand how a project can affect a species, how the well-being of a species is determined by certain environmental factors which must be maintained to make sure the species continues to exist. In the whole process of relating a proposed project or the listing of the species, everyone should have an understanding as to what is at stake and how the impacts really occur.

I think there is some honest justification for a broader explanation in the listing process than there may be in simply the designation of critical habitat, since we do attempt these days to show the listing of critical habitat, if such is necessary, at the same time, we propose the listing of the species. I think the avenue that the administrators should take is to explore in the broadest sense in the proposal document what the listing means, in the sense of what the species requires in order to stay viable, to exist. This is not quite the same, in my judgment, as preparing an entire environmental impact statement, because there are some very serious problems from our perspective in identifying all the things that could happen, for example, in the listing of a whooping crane, which is obviously an endangered species. Were we to do that tomorrow, there are all manner of things that might affect the whooping crane. What we can say is that it requires a number of imperatives. One is the perpetuation of its habitat in Canada, the protection of that creature as it migrates to the South. Things which impede these biological imperatives are easier to identify when somebody proposes something rather than predict out of the clear blue.

Mr. FORSYTHE. Yes, I gather you are telling me that as to the listing process, et cetera, perhaps the use of public hearings and the broader scope of attention that would bring to the listing process, would be helpful insofar as trying to make sure the input is all gathered, there is that broad understanding.

An agency proposing that prospect is where the EIS responsibility would remain.

Mr. SCHREINER. Yes. There are a whole array of things it may do positively or negatively aside from the endangered species.

Mr. FORSYTHE. Of course, most of our problem is having to deal with the projects that were authorized prior to the act and it is a little hard to do that. Are you aware of other projects that are in that same position that have been authorized but have not been the subject of endangered species consultations?

Mr. GREENWALT. We are aware of some that have a potential. I want to emphasize the potential because the potential is there only so long as we have not exhausted all the possibilities for resolving the problem. I am presently aware of 8 or 10 projects which represent potential problems. The actual existence of a confrontation is problematical. We have demonstrated that we can resolve many of these in the consultation process.

We have been consulting informally with the Corps of Engineers for some time on the Furbish lousewort, and more recently undertook formal consultation after the Corps had developed a good deal of background information on this plant, which is very restrictive in its range and has some very restrictive habitat requirements.

As a result of this consultation we have developed what is termed a biological opinion. It becomes the official biological opin-

ion about the probable effect of the proposed project on the species in question.

As you are aware, the Furbish lousewort has been listed as an endangered species. No critical habitat has been designated. This biological opinion which we have rendered indicates we can find no jeopardy to the continued existence of the species with this project if the Corps of Engineers undertakes a conservation plan which we have discussed with them in detail and which we have set forth for them to follow.

This basically is a fairly simple plan which would assure the continued existence of the Furbish lousewort in areas of habitat in which it has been known to exist in the past and to increase the numbers where it exists at present. If this is followed and is successful, then we are in a position to find biologically no jeopardy to the continued existence of the species. I mention this because the Furbish lousewort was considered to be in some way an unalterable condition to the dam. These kinds of things can be worked out. It is biologically sound in the case of the Furbish lousewort, which is hardy and apparently can be reproduced in a number of ways.

I think this is the way we should resolve these dilemmas in the future. I am fairly sanguine about our ability to do so.

Mr. FORSYTHE. To go a little further than that, I believe the law does not provide for the inclusion of all interested parties in the listing process. The impact of the Endangered Species Act can go beyond Federal agency operation into impact on State, public utility and private operations. One of the criticisms of the act is that there should be an opportunity for those beyond the Federal agency which does the consultation to be heard in the process. I am wondering whether if that mandate were to be added to the law it would create a problem.

Mr. GREENWALT. No; I would suggest I am willing to resolve the problem insofar as my own administration is concerned by indicating that we will offer public hearings in the process without exception. Whether or not folks will attend is another matter. But given the interest these days, I think we can get an audience on almost any subject relating to endangered species. Under the Administrative Procedures Act we provide for public comment and involvement, and I would be willing, in the interest of what I perceive to be a broadened public participation in these matters, to provide for a public hearing on each proposal. Please understand this is, as I think you intended it to be, in addition to the standard consultation process required in the act.

Mr. FORSYTHE. Yes. I am trying to find whether you can go beyond the Federal agency to allow others who might be impacted to have the opportunity to take part in the consultations. I would agree with you, that the consultation process does help enlighten those involved. I think if we are going to keep this act and keep it working the way the committee wants it, it is going to have to have that kind of help. One other area of interest came up in the testimony on the Mississippi sandhill crane. There should be some way of getting critical habitat designations recorded locally so that people who are involved in dealing in land or private acquisition of land could have some way when they search the titles to find out



that the use of the land in question could be subject to some restrictions.

I understand you feel there may be a problem in this. Is it a critical problem?

Mr. GREENWALT. The problem is in the legal sense, and I am not sure I can define what our solicitors find is a problem in attempting to record each of these critical habitats. I think the important thing is that the local folks, the local jurisdiction, certainly the States, understand that there are critical habitats designated in the area in which they may operate, also recognizing that the designation of critical habitat alone does not impact anyone in and of itself but it should alert them to the fact that it can have, as we all know now, problems related to Federal involvement in these things.

As to how best to inform the public where critical habitat has been designated, we try our best to make this information available. One of the approaches we ought to try before we attack the problem by an amendment to the act is to make available in a loose-leaf form the critical habitat designations to the State Governors and any other level of jurisdiction which they would like to have us supply this information to so that there are maps or descriptive information available which outline the critical habitat.

Critical habitats are not the sort of thing that may go from one lot to another and exclude a third one or whatever. I believe we can supply information in an administratively reasonable way that conveys the information as readily as possible.

I am hopeful that one day we can begin to do the reverse and ask the people to take the pages out of the book because the critical habitat is no longer necessary.

Mr. LEGGETT. It could occur if you had a larger staff. I know you have consistently asked for more people and you have consistently been denied. I presume that most of the people that are petitioning you are petitioning the listings?

Mr. GREENWALT. Not entirely. It is correct that the number of listings will increase more rapidly than the number of delistings. One of the obvious problems with delisting is that the creature itself has to cooperate to the degree it reproduces sufficiently. I say this almost frivolously, but it is not quite the case in all circumstances. The alligator has done very well and in most cases it has been reclassified to threatened, not in all areas, but it seems to me that we can look very soon to the probability of reclassifying the alligator. Eventually it would be just another very valuable, unique member of the natural fauna of this country managed by the States in which it resides, as it should be.

Mr. FORSYTHE. Mr. Chairman, I have just one more question I would like to ask at this time.

Do you have any system of determining which of those species for which petitions have been received will be considered for listing? Do you take them in the order the petitions are received?

Mr. GREENWALT. We have a priority approach and Mr. Schreiner will give it to you forthwith.

Mr. SCHREINER. Mr. Forsythe, we have a very good system of establishing priorities based on a number of biological factors, but to sum it up in a nutshell, we give priority to higher taxa before

lower taxa, meaning full species before subspecies or lesser taxa. We gave, arbitrarily, priority to U.S. species before foreign species, and we give priority to those species which are in the most trouble, before those that are in less trouble. Along with that, priority is given to those species which we can help or believe we can help. That is not always the case.

Mr. FORSYTHE. The process you describe would seem to require a good bit of biological knowledge.

Mr. GREENWALT. Some of this is done without the full range of biological knowledge. Biologists never know enough to be utterly comfortable with things they are asked to do. We may make decisions based on informed intuition as to whether one species ought to be worked on before another. One of the important things to understand in carrying out of the Endangered Species Act as far as we are concerned, it does not stop upon listing. Our aim is to do something for the creature in addition to legally classifying it as being in some kind of jeopardy.

Our interest is in fact to remove the creature from the list by virtue of its recovery. That is extremely important, that we take as a nation, and certainly as an agency, positive action to improve the status of the species, plant, or animal, so that it can be removed from the list on the basis of its biological recovery. A lot of the things that I suspect you have not heard much about in the course of these hearings is that we are busily engaged in trying to achieve this, and have done so in some instances. Several fish have been removed, unhappily, not the snail darter at this point.

Some years ago, for example, the trumpeter swan was in very limited numbers in the conterminous United States and was listed under the former act as endangered species. It has been reestablished in its former range to the point where it is no longer endangered or threatened and has almost been forgotten as a success story. That is the sort of thing we would like to achieve with all these species, recognizing that some are going to be very difficult. Some may be impossible. I am not at all optimistic on the future of the California condor.

Mr. FORSYTHE. That leads into this recovery team situation the chairman pointed out. You never have enough people to fully carry out any of the mandates that we so easily pass on to you. In this recovery team situation, are you able to do an effective job with the personnel you have available?

Mr. GREENWALT. We are able to do an effective job with the recovery teams because most of them are made up of people who work for somebody else. We obtain their talent at very little cost to us. No salary or costs of that kind. We use anyone, private or public, who is recognized as having a contribution to make to the team and who is available to do so.

We have had great success with the recovery team approach which, as I am sure you understand, is charged with the responsibility for developing a plan, the following of which is likely to lead to the recovery of the species. The team does not stop its performance once a plan is developed and approved. These people are the recognized experts. We can never accumulate in the Service the talents to do the job. Therefore, they follow the process. I would envision recovery teams going on into the future, each one hopeful-

ly celebrating the time when it can be disbanded because the species has recovered.

At present we have 59 teams in force for about 70 species. In some cases the individuals involved may be on several teams because they hold a body of knowledge that is available for these species. We have had very good cooperation from other Federal agencies and State agencies and the private sector in offering the services of people for whom we make no recompense except incidental expenses.

Mr. FORSYTHE. You have this well documented?

Mr. GREENWALT. Yes, sir. We would be glad to give you some examples of recovery plans that are presently in effect.

Mr. FORSYTHE. I think that would be helpful, Mr. Chairman. [The material was submitted and placed in the hearing record files of the committee.]

Mr. LEGGETT. Thank you.

I am going to adjourn these hearings at quarter to 12 unless some other Members have some questions to ask. We do have a lot of formal questions that were prepared by staff, and those will be submitted to you.

We are interested in the Cahaba River, the Luktata River, the sandhill cranes, the red cockaded woodpecker, the Virgin River in Utah, the Colorado River, and the Everglade kite. We could spend a half hour on each one of those species that have been brought to the attention of the subcommittee, going through exactly who shot John and why. I do not know exactly how valuable that would be. Our concern is that we know where we are going with this act, and it is very simple to assume a strong environmental posture and go stalking ahead with seven professionals listing several hundred species, all of which I presume are not U.S. species?

Mr. GREENWALT. That is correct, sir.

Mr. LEGGETT. And all of which do not involve critical habitat; is that correct?

Mr. GREENWALT. That is correct, yes, sir.

Mr. LEGGETT. Why is it that some species have critical habitat and others do not?

Mr. GREENWALT. Fundamentally with some species the identification of critical habitat is not necessary to the preservation and well-being of the species. For example, critical habitat among the aforementioned alligators is no longer as important as it was once because the alligator has improved its status, and has in many cases been reclassified. The establishment of critical habitat for certain of these species is not necessary.

I mentioned the Furbish lousewort earlier. The identification of critical habitat is not absolutely necessary to the recovery of the species. The known range, the kind of habitat into which the Furbish lousewort can be reintroduced, is well known. If the lousewort is properly managed in accordance with a conservation plan we have suggested to the corps, then there is no need to identify critical habitat because it can be reintroduced in a wide variety of places.

Mr. LEGGETT. There is one critical habitat that appeared to me to be extraordinarily large and presented a considerable dilemma for the folks in the State of Florida, that is the habitat of the Ever-

glades kite. The maps that were presented to the subcommittee appear to show an area that looked like it might have been several hundred miles long paralleling the development along the Florida coast, which is pretty well isolated, at least for electrical communication, from one coast to the other. Are you familiar with the problem?

Mr. GREENWALT. I am familiar with the problem in one sense.

Mr. LEGGETT. How do you solve that?

Mr. GREENWALT. The resolution of that problem is that the presence of critical habitat does not necessarily mean that it cannot be breached by a powerline, for example. The question that was raised obviously was in connection with the Loxahatchee National Wildlife Refuge and the powerline crossing a corner of that area, only part of which was based upon the critical habitat problems as it related to the Everglades kite. One of the problems that was confronted—

Mr. LEGGETT. What you mean is that the precedent in your denying the service to cross a part of the Loxahatchee Wildlife Refuge would not be a precedent in denying crossing in all areas?

Mr. GREENWALT. Yes, sir, or to those areas designated as critical habitat. One of the key factors that must be borne in mind in connection with Loxahatchee, is that it is not only a critical habitat, it is a national wildlife refuge which adds another dimension to the problem.

Mr. LEGGETT. We had an application that was in fact denied, and you have a problem to solve in getting power to Miami Beach. I am just wondering, if the power company involved has thrown up their hands. Maybe it is not just a ploy for this subcommittee. They say they really do not know what to do unless the law is changed.

Do your people in the field, when they deny an application like this, have any power to hold out hope or to negotiate how an objective can be reached? Obviously you are doing that in the Dickey-Lincoln project which has been before the Congress, unfortunately about two dozen too many times.

Mr. GREENWALT. In direct answer to your question, yes, we can hold out hope for these folks. I would reiterate that the denial in the case of the Loxahatchee Refuge was fundamentally one that was made in Washington, which I was a party to. The decision was based less upon the fact this was a critical habitat for an endangered species than it was on crossing a national wildlife refuge, which brings into play another set of concerns. But in terms of going from wherever the power is generated to a place like Miami or the consumer across the critical habitat of the Everglades kite, or any other creature, is a matter subject to consultation and negotiation. We would be delighted to have our people discuss how this might be done and in what locations it might occur with the Florida Power & Light Co. or any other company.

Mr. LEGGETT. When you denied it personally yourself, did you just flat out deny it or did you talk to these people?

Mr. GREENWALT. We had been talking to them for a long time about crossing the national wildlife refuge. I think one must not mix the Everglades kite situation with the crossing of the national wildlife refuge, which are two different things.

Mr. LEGGETT. Aren't there two refuges in that area, or is that all just one?

Mr. GREENWALT. It is all one refuge, part of which is leased by the Fish and Wildlife Service from the flood control district, and a part of which we have purchased over the years. Ironically the piece of land that the power company wanted to cross was one of those that had been purchased by the Fish and Wildlife Service.

Mr. LEGGETT. It is your feeling that neither of these refuges can be crossed?

Mr. GREENWALT. It is only one refuge, and the answer to your question is not necessarily.

Mr. LEGGETT. The principle on which you denied it was that it was a refuge?

Mr. GREENWALT. And one of the concerns we had was that the corner of the refuge that was proposed to be crossed by the power line was also one we purchased specifically to develop for wildlife habitat including habitat for the Everglades kite, among other kinds of creatures. The power company offered to purchase land elsewhere. One of the problems we encountered with that was that their willingness to acquire land of an equal value left us with far too little land as a replacement. Another problem was that the crossing to the other side was across a very large refuge, a large marsh area far removed from the area in which we preferred to have land purchased. The cost differential was so great we would have wound up with a miniscule piece of property as compared to the value of the land that they would have consumed across the marsh.

This is all very complicated but it boils down to a combination of problems, only a part of which was related to the endangered species.

Mr. LEGGETT. Considering the fact that apparently everybody agrees that Miami is subject to blackouts, and having just experienced one myself last night, I am a little bit concerned about that. In fact, I am still experiencing blackout, so far as I know. You understand what Miami's problem is and what the Fish and Wildlife Service's mission is and you understand what they want to do. Has the Fish and Wildlife Service done anything to figure out where would be the least detrimental area for crossing and offered that as an alternative to the Florida Power people?

Mr. GREENWALT. The Florida Power people may take an alternative, and that is simply to skirt the edge of the refuge involved. They are or can go around the outside of the Loxahatchee Refuge.

Mr. LEGGETT. The information we had the other day was they could not do that.

Mr. GREENWALT. I am unaware of that. My reading is that the plan at present is to go around the outside of the refuge. I do not know any more about it than that.

Mr. LEGGETT. If you can give us a report on that, it would be helpful.

Mr. GREENWALT. I surely will.

[The information follows:]

**STATUS OF FLORIDA POWER AND LIGHT PROCEEDING AROUND LOXAHATCHEE  
NATIONAL WILDLIFE REFUGE WITH POWER LINE**

Florida Power and Light has not, to our knowledge, initiated work on the power line around the refuge. It is our understanding the Florida utilities have eminent domain authority for crossing private lands. Therefore, there is nothing preventing the company from completing the power line.

**Mr. LEGGETT.** I am going to leave in about 2 minutes and then, Bill, you can ask all the questions you want. In fact, I will make you chairman.

As far as the Houston toad, we had a rather dramatic movie presented by the U.S. Chamber of Commerce. It indicated that you had a large portion of a downtown Houston shopping center pretty well discombobulated for 3 or 4 years because of efforts to list a species that apparently was only available in the springtime.

I am wondering if you can dramatically move ahead and get that matter resolved so it is not a conversation piece for every Member of the Texas delegation before the Congress.

**Mr. GREENWALT.** Mr. Chairman, we had, as we intended to—and we did not even have to employ one of our seven-man powerhouse—a contract with a university to examine the proposed critical habitat of the Houston toad in the Houston area to ascertain whether there was very little probability the little creature exists there any longer. This group recently reported to us. As a result of their study I have determined that the toad does not exist in three of the five sites in Harris County, where Houston is, because with the proper combination of rainfall in the spring of the year when the toads, which are ordinarily very secretive, appear, none appeared.

We have determined that there are only two sites in that area, one of them an Air Force base and another being land owned by a railroad company, that hold any potential of supporting the toads at this time. The consternation that has been exhibited, I think, is resolved insofar as the toad is concerned. As far as the species itself is concerned, it is easy to reproduce in captivity and 2,500 of the creatures have been produced and released in the wild elsewhere in suitable habitat in Texas. So the creature's future is assured and the concerns of the folks in Houston, I hope, have been allayed—

**Mr. LEGGETT.** Good job.

Why is it that 2,500 of the toads, that are easy to reproduce, are designated as critical but, nobody has even made a petition to list the 500 Tule elk, which are not too easy to produce, as critical? We are back up to a thousand. That may be the reason.

**Mr. GREENWALT.** They were down to a low number and there was great concern about them. Some years ago there was—apparently before the petition process was available—concern about whether they ought to be listed as threatened or endangered. They are on the way to recovery now.

The production in captivity of 2,500 of the creatures does not go toward making those creatures instantly no longer endangered or threatened. We are trying to get a sufficient number introduced into habitat in which they can breed naturally so we can take them off the list and they can become a part of the viable fauna of the United States. Unfortunately you could not do that quite so

readily with Tule elk because their habitat needs are far more complicated and much larger in scope than the toad.

Mr. LEGGETT. We had the Department of Defense testify. They indicated they have no insurmountable problems with you at the present time. We have had the Corps of Engineers who testified likewise. I do not know whether the Bureau of Reclamation has been in or not but if there was a problem Mr. Herbst would have mentioned it. We have had some testimony that some folks wanted some reclamation on local works on the Colorado River. If we can have an analysis from you, for the record, of all the problem areas you see with each of these agencies, and with each of the critical habitats you have established, it would be helpful. We would also like a map showing all the critical habitats which have been established, and a list of which of these habitats will be in conflict with Federal projects.

Mr. GREENWALT. Yes.

Mr. LEGGETT. We would like to get for the record as much detailed analysis as we can without our bringing it in either a burlesque or inadequate fashion. Please produce for us a proposed listing of the domestic species which will probably be listed for the balance of this year, the critical habitat that will probably be listed, the Governors who will probably be contacted, the EIS's which will be required, if any, with respect to those, the hearings that you will hold with respect to those, your new hybridized listing and designation procedure, and a list of all the lawsuits which are currently pending against the Department for listing or enforcement in this critical habitat area.

We are really trying to figure out where we are going with the law in its current shape for the next 3 years. We are trying to extend this law to assure our colleagues that Heaven and Earth are going to descend one on the other if the Act is extended. We would like to know the projections of the Department as to exactly where we are going.

[The information follows:]

#### SHOULD AN ENVIRONMENTAL IMPACT STATEMENT BE REQUIRED BEFORE LISTING A SPECIES OR DESIGNATING CRITICAL HABITAT?

The preparation of full blown Environmental Impact Statements (EIS) before Critical Habitats are listed has been considered since the Act was passed in December of 1973. In fact, this issue has been considered every time a species is proposed for listing or a Critical Habitat designation is proposed.

An Environmental Impact Assessment (EIA) in accordance with the requirements of the National Environmental Policy Act (NEPA) is prepared at the time of each proposed rulemaking. After a review of the public comments received on the rulemaking, the EIA is updated as necessary and finalized. Prior to final rulemaking, the Service considers the public comments received and the final EIA to determine whether the rulemaking is a major federal action affecting the human environment; thus requiring the preparation of an EIS. If an EIS is not required, a "Negative Declaration" to that effect is prepared. To date, only "Negative Declarations" have been prepared for the following reasons:

The first step in determining whether an EIS should be prepared is to decide whether the proposed action is a major Federal action. The designation of Critical Habitat is clearly a Federal action; the question is whether it is a major one. Traditionally, the focus in making this decision is upon "the cost of the project, the amount of planning that preceded it and the time required to complete it", *Hanley v. Mitchell*, 460 F. 2d 640, 644 (2d Cir. 1972), reflecting NEPA's orientation toward project construction that will result in irretrievable commitment of resources. Obviously, this approach does not work in the context of the Endangered Species Act.

The listing or delisting of a species or its Critical Habitat is essentially regulatory in nature. In determining whether an action taken pursuant to a regulatory program is a major Federal action the focus should be upon the impact of the proposed action on the persons or things regulated.

Generally, the designation of Critical Habitat does not rise to the level of being a major Federal action. Critical Habitat designation is only a matter of concern for other Federal agencies. It is a recognition of the biological significance of certain habitats. It is nothing more or less than a notification to all Federal agencies that the designated area is the air, water and land space needed to assure the continued survival of the species and to provide reasonable additional space for its future recovery and removal from the list. It puts Federal agencies on notice that their actions in the designated areas cannot be inconsistent with the conservation of the Endangered or Threatened species. Only those actions that would alter the habitat to the detriment of the species that depend upon it are restricted. Thus, there may be many kinds of Federal actions that can occur in critical habitat areas.

In many cases, the Service has no way of knowing whether, or the extent to which, other Federal agencies may be affected. The Service does not know what actions the Federal agencies have planned, or will plan in the future, or what the impact of those actions will be on the species or Critical Habitat area. The Service does attempt to discover what these effects will be through inquiries prior to the final designation. But as a general rule, the effects of a Critical Habitat designation do not make it a major Federal action.

The second step in determining whether an EIS should be prepared before undertaking a Federal action is to decide whether the action will significantly affect the quality of the human environment. The focus here is on the quantitative environmental impacts of the action.

The designation of Critical Habitat does not have any direct impact upon the environment. The designation of Critical Habitat, in and of itself, prevents nothing, stops nothing, discourages nothing and controls nothing. It simply designates an area that is necessary to the continued existence and possibly to the recovery of an Endangered or Threatened species. It is a biological designation. Economic and other factors cannot be considered because there is no way of knowing what Federal actions may be contemplated in the area. These activities are only curtailed, modified, or delayed when the activity will materially reduce the value of the Critical Habitat to the Endangered or Threatened species concerned.

A Critical Habitat designation may indirectly affect the environment, however only to the extent it ultimately causes Federal agencies to modify or forego actions that would directly affect the environment. Any such indirect environmental impact is generally beneficial. The prohibition against modification of Critical Habitat by Federal agencies tends to preserve the natural environment. This reflects the Endangered Species Act's purpose of conserving both Endangered species and the ecosystems upon which they depend. Thus, even in the extreme case, the effect of designating Critical Habitat is to preserve the status quo. The environmental impacts in these rare situations have not been found to be significant. The Service believes that the administrative record generated during the rulemaking process, coupled with the proposal's EIA, creates the "functional equivalent" of a full blown EIS. Thus, as a result of the rulemaking process the decision maker has received the same environmental education on the anticipated impacts of a Critical Habitat determination as he would have had if an EIS had been prepared.

The Federal action agency, not the U.S. Fish and Wildlife Service, makes the decision to act, to modify an act, or not to act. The key to success is good faith consultation by the Federal action agency as early in the planning process as possible. If requiring a full blown EIS is used to delay the U.S. Fish and Wildlife Service in designating Critical Habitat, it will ultimately hurt the Federal action agency most. If an EIS is used to try to force consideration of economics, sociology, politics, etc., in Critical Habitat determinations, instead of dealing strictly with biology, it will ultimately hurt the species most.

Whether or not a Critical Habitat is actually designated, Federal agencies are still obligated to assure that their activities do not jeopardize the continued existence of an Endangered or Threatened species under section 7 of the Act. One of the prime biological considerations in deciding whether or not a species will be jeopardized by a particular Federal activity is the effect of that activity on the species habitat. This further illustrates that the act of designating Critical Habitat is a straight forward biological process whose primary benefit is to the Federal agencies that must comply with section 7 of the Act. It stands to reason that if the Federal agencies know where critical habitats are located it helps their decisionmaking processes. If they do not know where the Critical Habitat will be designated they must find out



before they know whether or not to request consultation. If the Service must prepare an EIS before designating Critical Habitat, it will take an additional year or more for each designation. This would be disastrous to the Federal agencies and their actions that may effect an Endangered or Threatened species.

Forcing the preparation of an EIS before a Critical Habitat is designated regardless of whether or not it is required by NEPA will: (1) hamper Federal agencies in complying with section 7 which can only result in litigation, delays and work stoppages, (2) not relieve Federal agencies from the necessity of complying with section 7 because regardless of whether or not a Critical Habitat is listed, the Federal agency must assure that its action does not jeopardize the continued existence of the listed species, and (3) regardless of motive, serve not only to the detriment of Federal agencies and their actions, but to Endangered and Threatened species and their habitats.

The Fish and Wildlife Service is in the process of preparing an EIS on the entire endangered species program. This document will be available in draft for review and comment within one year.

Mr. FORSYTHE. One final point, Mr. Chairman. We may have some questions for the record, if it could be held open.

Mr. LEGGETT. The majority will undoubtedly have some questions, too. We will submit to you the questions already developed by counsel and if it occurs to you at any point in your deliberations that either the law or your regulations need amendments, I would appreciate your suggesting that after an appropriate consultation among yourselves.

Mr. GREENWALT. Certainly, sir. We will provide all this for you.

Mr. LEGGETT. I hesitate to wait until August 10 to reauthorize this act. But as I see it, we have no other choice. The problem is Congress will be adjourning about the third week in August and it will be taken up again in about the second week in September.

Mr. GREENWALT. I think, Mr. Chairman, there may be a solution to that dilemma, and that is to give you a running account of the success, the progress made in this entire process prior to submitting something in final form by August 10. I shall convey your concern to Mr. Herbst and Mr. Freeman when I see them on Friday and suggest we work to keep you fully informed so you can make the greatest possible use of the time remaining in this session.

Mr. LEGGETT. The problem is the way the law currently is laid out, as I see it; if you have a 2 percent overlap you are unable to resolve why a citizens suit would lie, providing they could prove the merits of the case. There are a lot of things besides dams that could be affecting critical habitat. It could be housing or developing parts of our country. It could be all kinds of things that are essential. So the question is, is it possible for the administration to agree on any kind of a balancing mechanism whatsoever we can insert into this act? We have balancing mechanisms in virtually every single act this Congress has enacted. This is one of them in which we apparently omitted any executive discretion and we would like your views on that.

[The information follows:]

#### VIEWS ON A BALANCING MECHANISM

Since passage of the Endangered Species Act over four years ago, there have only been three Federal projects resulting in court actions under section 7 and only one of these has resulted in what may be considered by some people as an impasse. This indicates that implementation of section 7 is not having the profound impact that many anticipate. Conflicts can and are being resolved through the administrative process. Section 7 guidelines and regulations provide adequate mechanisms to assist

Federal agencies in carrying out their actions in ways which are consistent with the needs of endangered and threatened species. Generally, Federal development agencies are actively seeking compliance with the Act particularly during the planning stages and often during construction. Alternatives are usually available. The Nation's lands and waters have multiple values and multiple uses. A balance between development and preservation can be achieved. The existing administrative processes should be given an opportunity to work.

Mr. LEGGETT. The meeting is adjourned.

[COMMITTEE NOTE.—From the beginning of the 95th Congress until the conclusion of these hearings, the subcommittee received hundreds of letters regarding the advisability of amending the Endangered Species Act. Printing costs and space prohibit the inclusion of most of this correspondence in the hearing record, but it should be noted that the writers opposed any weakening amendment by an overwhelming ratio 8 to 1.]

[The following was submitted for the record:]



United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

BY SPECIAL MESSENGER

Honorable John M. Murphy  
Chairman, Committee on Merchant  
Marine and Fisheries  
U.S. House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed is additional information requested at the oversight hearing held before the Committee on Merchant Marine and Fisheries, Subcommittee on Fisheries and Wildlife Conservation and the Environment, on Wednesday, June 28, 1978, on the Endangered Species Act.

Sincerely,

*Diane S. Greenberg*

Diane S. Greenberg  
Acting Legislative Counsel

Enclosure

## 1. Cahaba River, Alabama

QUESTION: On what basis were the cahaba shiner and goldline darter proposed for listing?

ANSWER: Data on the biology and status of these fishes has been published in professional journals (see attached list of references). Information on the status of the habitat is contained in a USGS report (Catalogue of Information on Water Data, Station Listings for Part A- Streamflow and Stage, Part B- Quality of surface water, Part C- Quality of ground water. South Atlantic-Gulf Water Resources Region 03, Geological Survey, U.S.D.I., Edition 1974. Cahaba River information on pages A140-A141); these data were then printed out via computer to illustrate trends and showed declining water quality. Unpublished information, chiefly from Dr. John Ramsey (Auburn Univ.) and members of the Southeastern Fishes Council, was also used. All ichthyologists familiar with the Cahaba and its fishes were contacted.

QUESTION: What studies were conducted to determine the critical habitat of these species?

ANSWER: No specific contractual studies were conducted. The proposal was based on information received from Southeastern ichthyologists as well as the personal experience of the Staff Ichthyologist at the Office of Endangered Species, who has an extensive knowledge of Alabama fishes and their habitats. A contract study on Critical Habitat is presently underway. The results will be used to modify the proposal if necessary on the basis of the biological information received.

QUESTION: Did the Service review the evidence on these species presented in the Stiles & Howell report?

ANSWER: The Service is presently considering their report.

QUESTION: If so, why was this evidence rejected?

ANSWER: This report has not been rejected. It will be taken into account before any further action is taken.

QUESTION: What efforts were made to determine if these species existed in other tributaries of the Cahaba River?

ANSWER: Distributional studies of fishes in the Cahaba River and the other Mobile Basin Rivers has been conducted during the past 10 - 15 years. The Cahaba River is one of the best sampled streams in the State and has been surveyed by over 20 professional biologists. To date, the Critical Habitat as proposed in the Federal Register best reflects our knowledge of the distribution of these species. Additional information will be assessed as it becomes available.

QUESTION: Was the Fish and Wildlife Service staff biologist on this issue a known protagonist for the Cahaba River?

ANSWER: The Staff Ichthyologist at the Office of Endangered Species is an Alabama native and was active in conservation projects prior to joining the Service. However, when he joined the Service, he severed all formal ties with organizations favoring specific conservation projects. The proposal was based on biological data as they concern the status of two fish, not on alleged motives to protect the Cahaba River (see attached letter).

QUESTION: What efforts are underway to review the evidence developed by the Birmingham Chamber of Commerce?

ANSWER: This information will be reviewed and considered by the Service before any action is taken. Further, a review panel has been set up, composed of professional biologists, to examine the data submitted and make recommendations to the Director of the Fish and Wildlife Service concerning a final course of action on the status of the Cahaba fishes. The final decision will accurately reflect the biological status of the fishes and will include Critical Habitat that is based on the best data available.

## Cahaba Fishes Bibliography

- Miller, R.R. 1972. Threatened freshwater fishes of the United States. Trans. American Fish. Soc. 101(2): 239-252.
- Ramsey, J.S. 1973. A preliminary list of extinct and rare freshwater fishes of Georgia. unpubl. Ms. 7p.
- Ramsey, J.S. 1976. Freshwater Fishes. In: H. Boschung (ed.), Endangered and Threatened Plants and Animals of Alabama. Bull. Alabama Mus. Nat. Hist. No. 2. pp. 53-65.
- Ramsey, J.S. Goldline darter, Percina aurolineata. Status report.
- Ramsey, J.S. Cahaba shiner, Notropis sp. Status report.
- Ramsey, J.S., W.M. Howell, and H.T. Boschung Jr. 1972. Rare and endangered fishes of Alabama. In J.E. Keeler (ed.), Rare and endangered vertebrates of Alabama, Pp. 57-86. Game and Fish Division, Alabama Dept. of Conservation and Natural Resources, Montgomery.
- Suttkus, R.D., and J.S. Ramsey. 1967. Percina aurolineata, a new percoid fish from the Alabama River system and a discussion of ecology, distribution, and hybridization of darters of the subgenus Hadropterus. Tulane Stud. Zool. 13(4): 129-145.

3.

**Question:** Has the FWS ever attempted to warn affected agencies of the possible impact of a Critical Habitat designation?

**Answer:** The proposed rulemaking for a Critical Habitat determination includes the probable impacts of such designation on known actions by Federal agencies. Not only is that evaluation published in the Federal Register, but any agency whose actions may result in the destruction or adverse modification of the habitat were it determined critical is requested to comment on the draft prior to consideration by the FWS of a final rulemaking.



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR  
FISH AND WILDLIFE SERVICE

In Reply Refer To:  
FWS/OES --/P44/--

JUN 2 1977

Mr. Vance M. Mays  
Office of the Chief of Engineers  
Military Engineering DAEN-FEB-N  
Washington, D.C. 20314

Dear Mr. Mays:

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543) requires all Federal agencies to insure that actions authorized, funded, or carried out by them do not adversely affect the Critical Habitat of Endangered species. In the Federal Register of May 16, 1975 (40 FR 21499-21500), the Fish and Wildlife Service provided notice of its intention to determine Critical Habitat for 108 Endangered species, among them the Houston toad (Bufo houstonensis).

After reviewing data available in the literature and the recommendations of Dr. Robert A. Thomas of Texas A & M University in a report on Critical Habitat of B. houstonensis to Region 2 of the Fish and Wildlife Service, four areas in central Texas involving portions of Bastrop, Burleson, and Harris Counties are described as being critical to the survival of this species. We have decided to proceed with a proposed rulemaking (enclosure) that would determine the recommended areas to be Critical Habitat pursuant to Section 7.

The purpose of this letter is to notify you of this Proposal to determine Critical Habitat. It is our understanding that a portion of the proposed Critical Habitat is on Camp Swift. We ask that you submit any comments or pertinent information within 90 days of your receipt of this letter.

Sincerely yours,

Deputy Associate Director

Enclosure



DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF ENGINEERS  
WASHINGTON, D.C. 20314

REPLY TO  
ATTENTION OF:

DAEN-CWP-P

AUG 31 1977

LAFA

Mr. Lynn A. Greenwalt  
Director, U.S. Fish and  
Wildlife Service  
Department of the Interior  
Washington, D.C. 20240

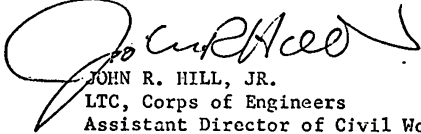
Dear Mr. Greenwalt:

I am pleased to respond to the Proposed Ruling on the determination of Critical Habitat for the Houston toad published in the Federal Register 26 May 1977.

Our comments regarding the proposed ruling are attached as Inclosure 1.

I appreciate the opportunity to review the proposal and provide comments.

Sincerely yours,



JOHN R. HILL, JR.  
LTC, Corps of Engineers  
Assistant Director of Civil Works,  
Environmental Programs

1 Incl  
as

## U.S. Army Corps of Engineers

Comments on the Proposed Status and Critical Habitat  
of the Houston Toad

26 August 1977

The following information has been summarized by the biologists of the Galveston District:

a. Distribution. The Houston toad (Bufo houstonensis) is considered one of the most endangered species of amphibians in the United States. Although historical records occur from seven Texas counties (Austin, Bastrop, Burleson, Colorado, Fort Bend, Harris, and Liberty), the species is presently known to occur only in Bastrop, Burleson, and Harris Counties. Current breeding populations have been roughly estimated at approximately 1,500 in Bastrop County, 500 in Burleson County, and fewer than 100 in Harris County (Thomas and Potter, 1975; Potter, 1977; Potter, personal communication).

b. Habitat Preferences. The Houston toad is restricted to loose, sandy soil which is generally well drained. The species appears to require some ground cover but occurs in hilly wooded regions as well as open prairies and cutover fields (Thomas and Potter, 1975). According to McClure (1974), the toad is found in loblolly pine woods in the northern part of its range and along sandy ridges of prairies in southern regions. Temporary pools and shallow potholes are preferred for breeding, but permanent small ponds and ditches are used where land-use practices have eliminated temporary standing water (Thomas and Potter, 1975; and McClure, 1974).

c. Critical Habitat. The designation of selected areas as critical habitat is apparently necessary for survival of the Houston toad. The species is sensitive to environmental changes and is rapidly experiencing losses in habitat resulting from urbanization and industrialization throughout a major portion of its range. Regions proposed as critical habitat in Bastrop and Burleson Counties will provide the best potential for protection of the species. Protection and management of the Houston toad in Harris County will be a formidable task because of intensive growth and development in peripheral areas of Houston. Lands proposed as critical habitat in this region consist primarily of isolated pockets surrounded by urban development (Figure 1). Chances for survival of the species in Harris County may be minimal even if selected areas are designated for protection.

d. Impacts of Proposed Critical Habitat on Corps of Engineers Projects. Corps of Engineers projects which may be affected by lands proposed as

habitat for the Houston toad are Upper White Oak Bayou, Sims Watershed, Clear Creek, Vince and Little Vince Bayous, and possibly Addicks Reservoir. Potential problems for each project are as follows:

(1) Upper White Oak Bayou. This project is undergoing final agency coordination prior to GCE approval and submission to Congress. Proposed critical habitat in the project area (Figure 2) consists of only a small area near the project's southern boundary. No impact on the project is expected.

(2) Sims Bayou Watershed. Sims Bayou is in the preliminary planning phase. Project feasibility is presently being evaluated, and the scope of work and cost have not yet been determined. Considerable acreages of proposed critical habitat occur in the southeastern and northwestern portions of the watershed (Figure 3). No problems are expected from critical habitat proposed in the southeastern area, but habitat designated adjacent to the bayou in the northeastern part of the project area could prevent any structural modification of the bayou near its headwaters.

(3) Clear Creek. Clear Creek is in the post-authorization planning phase. Designation of critical habitat proposed in the northwestern portion of the project area (Figure 4) may have a serious impact on plans for flood control channel alignment along the uppermost reach of project near stream mile 25. Proposed critical habitat borders the creek for approximately three-quarters of a mile between Mykawa Road and State Highway 35 where present plans call for widening Clear Creek to 200 feet.

(4) Vince and Little Vince Bayous. This project is in the construction phase. A draft Environmental Statement was filed with CEQ on 27 May 1977. Channel improvements have been completed on Vince Bayou from stream mile 0 at its confluence with the Houston Ship Channel to stream mile 3.8 near Queen's Road. Construction on the remainder of Vince Bayou to its upper project limit at stream mile 7.2 is scheduled to begin in the spring of 1978. A realignment away from the natural bayou is planned from stream mile 5.7 to 6.7, which will dissect part of the area proposed as critical habitat. The flood control improvements to the upper portion of Vince Bayou would be affected by the proposed critical habitat designation.

(5) Addicks Reservoir. Although Addicks Reservoir was not included in those areas proposed as critical habitat for the Houston toad by the U.S. Fish and Wildlife Service, the Texas Parks and Wildlife Department has requested that the northeastern portion of the reservoir (north of Clay Road and east of Addicks-Fairbanks Road) be added to the presently proposed areas. This would not be compatible with the operation of Addicks Reservoir as a detention reservoir for flood control.

✓ not necessarily under  
current operation

...ious from the abundant evidence that habitat critical to the survival of this toad must be protected and preserved. Equally obvious, urbanization and industrialization are significant activities causing the destruction of habitat necessary for the survival of the Houston toad. Finally, it is again apparent that a method of protection is required to preclude change of land use by all elements of the community. The designation of Critical Habitat will impact only federal agencies and their programs. The final ruling on designation of Critical Habitat will provide no mechanism to protect the habitat from non-federal activities.

If the Corps of Engineers and other federal agency projects will minimize or prevent damage to the critical habitat, then the agencies can manage the lands to preclude their alteration or destruction resulting from urban development and industrialization.

The Corps of Engineers recognizes the causes responsible for the diminution of the Houston toad and suggests specific methods be developed to insure the preservation of critical habitat.

HOUSTON TOAD (Bufo houstonensis)

## Referenced Publications

- McClure, W. L. 1974. The Houston toad, Bufo houstonensis Sanders. Texas Highway Department, Environmental Brief No. 74-12-02.
- Potter, F. E., Jr. 1977. Fact Sheet - Houston Toad. Texas Parks and Wildlife Department, Unpublished Report.
- Thomas, R. A. and F. E. Potter. 1975. Species Status Account, Bufo houstonensis Sanders, 1953. Published as Attachment to Texas Parks and Wildlife Department Job Performance Report, Federal Aid Project No. W-103-R-S, Job No. 70.

#### 4. Mississippi Sandhill Crane

**QUESTION:** How many acres of Critical Habitat have been designated for the Mississippi Sandhill Crane?

**ANSWER:** Approximately 25,500 acres in Jackson County, Mississippi were designated Critical Habitat for this Endangered crane. The total area very closely approximates all the savannah-like habitat that this crane uses during the course of a year for nesting and roosting. The present world population of this very distinctive, non-migratory subspecies of the sandhill crane is estimated at about 50 birds (in comparison, the well known whooping crane numbers about 110 birds in the world).

**QUESTION:** What distinguishes the Critical Habitat from the crane refuge?

**ANSWER:** Approximately 18,000 acres were selected as refuge lands, since no Federal protection would otherwise be afforded these acres. Private development could easily have taken place at either the I-10 interchange or elsewhere that could have quickly altered the habitat of the cranes so as to have further jeopardized their continued existence. Section 7 of the Act does not preclude private landowners from changing the habitats on their lands, unless such changes are aided, at least in part, by at least one Federal agency's actions. Approximately 10% of the refuge will be provided by the DOT purchase of lands in the immediate vicinity of the I-10 interchange.

## 5. Red-Cockaded Woodpeckers

**QUESTION:** How many areas contain known populations of red-cockaded woodpeckers?

**ANSWER:** The Service's best estimate is that 1-3,000 active colonies of this woodpecker exist within the historical range of the species. Each active colony is composed of a single breeding female and one adult male. Sometimes one or more subadult males from previous nesting seasons will be associated with the colony. To remain viable, one colony must be in close proximity to at least four others, so that non-breeding females would be available in case the single female is lost in one colony. Thus, the total population is estimated at between 3,000 and 10,000 birds scattered in 14 States from Oklahoma to Maryland and Kentucky to Florida.

**QUESTION:** Why is it endangered, if it is found in so many areas?

**ANSWER:** The red-cockaded woodpecker was listed prior to enactment of the present Act, which automatically classified all previously listed species as "Endangered" until such time as they could be reclassified or removed. The large distributional range of a listed species now being found in "so many areas" is not of itself, grounds for either reclassification or removal. This woodpecker has sustained massive reductions in total population from the loss of its required habitat. The woodpecker needs very old pine woodlands with little understory vegetation. Control of forest fires and cutting for forestry products or land development and farming have drastically reduced the available habitat. The Service does intend to make a thorough survey of the status of this bird throughout its range. If sufficient data becomes available demonstrating a need to reclassify this species, then we will propose such an action. As a past example of a once common species, note that the passenger pigeon (population was in the hundreds of millions, if not over a billion) would have been at least endangered now even if there had not been any hunting. That bird required certain habitat which today is difficult to find in any sufficient quality. As another comparison, the total present population of these woodpeckers is only slightly larger, possibly, than the listed Bald eagle in the lower 48 States.

**QUESTION:** Why was it listed as endangered in the first place?

**ANSWER:** As indicated above, the woodpecker is dependent upon very old pine woodlands that have small fires to control the understory vegetation. Cutting of pines for forestry purposes has in the past, at least, taken trees before they were mature enough to support the woodpeckers. In addition to pine removal, the suppression of periodic fires has allowed extensive undergrowth to appear which is not acceptable to these woodpeckers.

## 6. Virgin River, Utah (Woundfin Minnow)

QUESTION: On what basis was critical habitat proposed for the woundfin?

ANSWER: The proposal was based on recommendations of the Woundfin Recovery Team and the Regional Director of the Service's Region 2 office (see attached memorandum).

QUESTION: What studies of the native range of this species have been conducted?

ANSWER: A graduate student at the University of Nevada - Las Vegas conducted a thorough study of the Virgin River System. This study was supported in part by the Fish and Wildlife Service. A copy is attached.

QUESTION: How did you determine that increased summer river flows as a result of the Warner Valley Project would be offset by reduced winter and spring flows?

ANSWER: We do not understand the question. However, the Fish and Wildlife Service has not made this determination and we know of no one else who has made such a determination.



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

POST OFFICE BOX 1306  
ALBUQUERQUE, NEW MEXICO 87103  
November 9, 1976

SURNAME

*Hyatt*

|  |
|--|
|  |
|  |
|  |
|  |
|  |

## Memorandum

To: Regional Director, Bureau of Reclamation, Nevada

From: Regional Director (SE)

Subject: Woundfin Recovery Team Recommendation on critical habitat for Plagopterus argentissimus

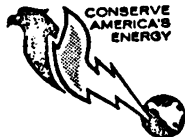
In April, 1967, the Regional Office received a recommendation from the Woundfin Recovery Team on critical habitat for Plagopterus argentissimus. In compliance with the intent of the Endangered Species Act of 1973, the Memorandum of Understanding on Interagency Coordination in Non-emergency Endangered Species Critical Habitat Determination, and regional policy, we requested comments on this recommendation from all concerned state and federal agencies on 13 April and 21 May, 1976. On 6 October, 1976, we again requested comments from those agencies that had not responded. To date we have received comments from the following agencies:

Nevada Department of Fish and Game  
Arizona Department of Game and Fish  
Bureau of Reclamation, Boulder City  
Bureau of Land Management, Arizona  
Bureau of Land Management, Utah

Both of the state agency replies are in agreement with the recommendation. All three of the federal agencies questioned the effects of the designation on proposed or ongoing projects (i.e., LaVerkin Springs Desalinization Project livestock grazing, campgrounds, Allen-Warner Valley Power Project). As no objections of a biological nature were received, and as the Regional Office agrees with the Recovery Team recommendation, we are submitting the critical habitat recommendation to Washington with the recommendation that Federal Register proposed rulemaking proceed.

The areas being recommended are:

1. The Virgin River from LaVerkin Springs (Utah) to Lake Mead (Nevada), approximately 85 stream miles. (From Sect. 25, T. 41 S., R. 13 W. to Sect. 31, T. 15 S., R. 69 E.)



*Save Energy and You Serve America!*

2. LaVerkin Creek (Utah) from its convergence with the Virgin River upstream six miles to the uppermost location woundfin have been recently captured. (From Sect. 25, T. 41 S., R. 13 W. to Sect. 31, T. 40 S., R. 12 W.)

An Environmental Assessment is being written on this designation. Further comments on the recommendation should be addressed to the Washington Office.

Sincerely yours,

Regional Director

JEJ/

Similar memo sent to:

- State Director, B.L.M., Utah
- State Director, B.L.M., Nevada
- State Director, B.L.M., Arizona

ECOLOGICAL DISTRIBUTION OF THE FISHES OF THE VIRGIN RIVER (UTAH, ARIZONA,  
NEVADA)

7. Colorado River Basin (Colorado squawfish/humpback chub)

QUESTION: On what basis were these species listed?

ANSWER: These species were once widespread in the Colorado River and its tributaries. However, as the rivers have been increasingly modified during the 20th century, the populations of native fishes have correspondingly declined. In some cases, exotic species have been reported to contribute to the decline of the Colorado River Basin fishes. The two species in question were listed simply because they have been extirpated from over half their former range, including the entire lower basin of the Colorado, and the populations are reduced in the remaining areas. Continued modification of the environment of these species can be expected as the insatiable demand for cheap water continues throughout the West. It is entirely within possibility that these species could become extinct at the present rate of decline before the end of the century (see attached information).

QUESTION: What population surveys of these fish have been conducted?

ANSWER: Both the Fish and Wildlife Service and the states involved have been sampling and are continuing to sample areas within the Colorado Basin for populations of these species (see attached information). Studies are being conducted by Seethaler (Master's thesis in progress) and individuals at Colorado State University. In addition, a major 3-year study has recently been completed through the Bureau of Land Management (as yet unpublished); Published studies include those by Holden (1973), Holden and Stalmaker (1975) and Johnson (1976).

QUESTION: What studies were conducted after the republication of the listing?

ANSWER; Studies on taxonomy, distribution and some aspects of life history have been conducted (see attached information). The states of Utah, Colorado, and New Mexico, plus the Bureau of Land Management, Bureau of Reclamation, and Fish and Wildlife Service are cooperating in two major projects on the fishes of the Colorado River Basin.

The Bureau of Reclamation is also involved in a project studying these species on the San Juan River. Also, three major studies are presently being conducted on the Green River in the Upper Basin. The results of these studies should clearly indicate the exact distribution of remaining populations.

QUESTION: Has the Service assisted efforts to introduce exotic species into the Yampa River?

ANSWER: Yes, the Fish and Wildlife Service has been involved in the introduction of an exotic species into the high tributaries of the Yampa. The species involved is the rainbow trout, which is not thought to be a competitor with either of the listed species.

QUESTION: Doesn't this type of activity amount to a violation of Section 7?

ANSWER: We are presently consulting on this question to determine if it is a violation of Section 7.

## INTRODUCTION

### General Description

The Colorado squawfish (*Ptychocheilus lucius*) is the largest of three living species of this genus, known through fossil records back to Pliocene time. It is elongate, somewhat compressed dorsoventrally, with a pike-like body and a long and flattened head. The mouth is large and nearly horizontal, and the pharyngeal teeth and arches are long and fragile, adapted for grasping prey (tooth formula 2,5-4,2). The dorsal fin has nine rays, lies well back on the body, and originates behind the insertion of the pelvic fins. Scales are small and embedded on the belly, breast and nape, with 80-95 in the lateral line. Adults are strongly countershaded, with a dark, olivaceous back, lightening along the sides to a whitish belly. In the young, there is a dark, wedge-shaped spot at the base of the caudal fin.

Although the descriptive term *lucius* means "pike-like," the Colorado squawfish belongs to the large and diverse minnow family, Cyprinidae, and is considered to be the largest minnow in North America (Miller 1961). Maximum weight has been recorded as exceeding 80 lbs. (36 kg) and the length attained nearly 6 ft. (1.8 m); however, specimens over 15 lbs (7 kg) have been rare over the past ten years. Their huge size and upstream migratory habits won for them the vernacular "white salmon of the Colorado."

Other members of this genus are restricted to the Sacramento-San Joaquin, Columbia, and Umpqua and Siuslaw rivers, in northern California, Oregon, and Washington. The abundance and predatory food habits of these west coast relatives seem to have defamed the Colorado squawfish, as Everhart and Seaman (1971) indicated under the heading Colorado squawfish:

"Because the squawfish are such predators on game fish, control has long been a fishery management problem. Everything from dynamite to chemical control has been tried. The most recent development is a specific chemical called 'Squoxin' for the control of these predators."

There is little doubt about the predatory habits of squawfish; in fact, adult Colorado squawfish are fed trout in Willow Beach National Fish Hatchery (Toney 1974). However, no population control has ever been necessary for Colorado squawfish, and in fact now just the opposite is necessary. The Endangered Species List published in the Federal Register on 11 March, 1967, (Vol. 32(48):4001) included Colorado squawfish; full protection under the Endangered Species Act of 1973 came from the Federal Register listing on 4 January, 1974 (Vol. 39(3): 1175). This Recovery Plan is being written to point out problems the remaining Colorado squawfish must overcome for continued existence and to develop a management scheme to assist their struggle for survival.

### Historical Distribution and Abundance

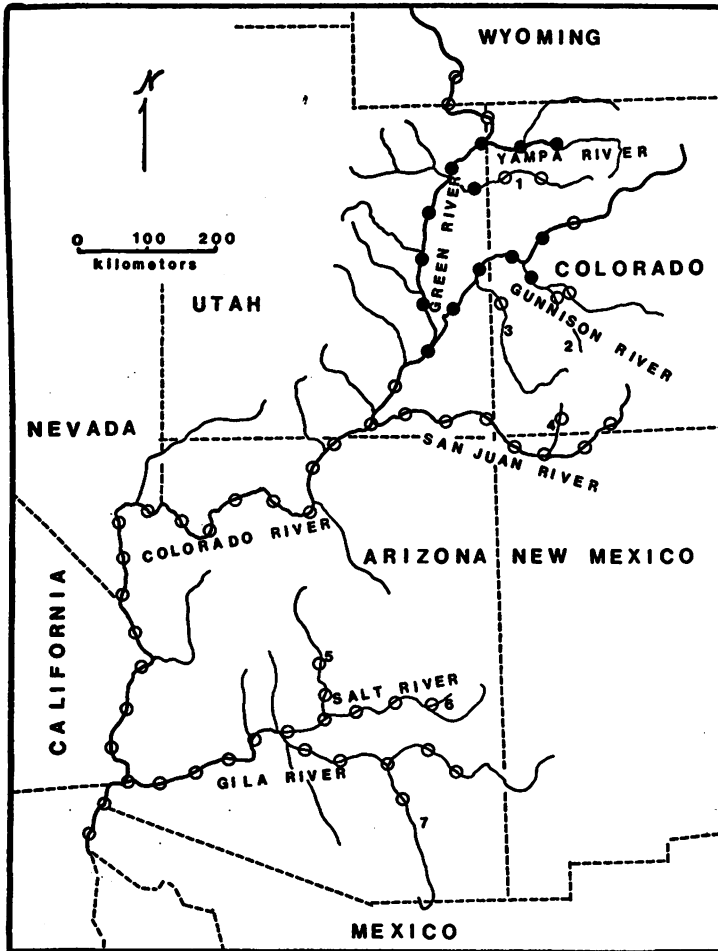
Colorado squawfish are found only in the Colorado River basin. Early records indicate they were abundant throughout the mainstream and most of the major tributaries from Green River, Wyoming to Yuma, Arizona, including the Gila River Basin in Arizona (See Fig. 1). Specific localities include:

1. Arizona: Gila River and its tributaries the San Pedro, Salt, White and Verde rivers; throughout the Colorado River mainstream from the Mexican border to Lake Powell (Minckley 1973).
2. Utah: Once found along the entire reach of the Colorado and Green rivers, the San Juan, White, Dolores and probably numerous smaller streams (Holden 1973).
3. Nevada: Only in the Colorado River Mainstream (La Rivers 1962).
4. California: Found only in the mainstream Colorado River from the Mexican border to the Nevada state line (Minckley 1973).
5. New Mexico: Once found in the San Juan and Animas rivers (Koster 1957; Conway 1975).
6. Colorado: The Colorado River and lower reaches of the Gunnison, White, Yampa, Dolores, San Juan, Uncompahgre and Animas rivers (Jordan 1891; Lemons 1954; Johnson 1976).

An indication of the prior abundance of Colorado squawfish was their use as fertilizer when they became stranded in drainage ditches (Miller 1961). Another was their widespread reputation as a food fish. Discussions with long-time residents from Colorado to Arizona indicate squawfish or "white salmon" were well known by early settlers.

### Present Distribution and Abundance

Present distribution of Colorado squawfish is difficult to determine because of the isolated nature of several of the river reaches they are known to inhabit (i.e., Grand, Desolation and Yampa canyons). In addition, high salinities, swift, variable currents and high turbidity make these rivers difficult to inventory effectively. In the lower basin Miller and Lowe (1964) and Minckley and Deacon (1968) have reported them as probably extinct in the Gila River basin, and Minckley (1973) expanded this classification to all Arizona's waters. The 1958 record of this species from the Salt River, Arizona (Branson, et al, 1966) is based upon a misidentification of the roundtail chub, Gila robusta (R.R. Miller pers. comm., XII: 1976). In the Upper Basin of the Colorado River, Holden and Stalnaker (1975-b) classified



**Figure 1.** Historical (all circles) and present (solid circles only) distribution of the Colorado squawfish in the Colorado River basin. The numbers refer to the following rivers: 1) White River, 2) Uncompahgre River, 3) Dolores River, 4) Animas River, 5) Verde River, 6) White River, 7) San Pedro River.

Ptychocheilus as rare<sup>(1)</sup> from above Lake Powell to above Grand Junction, Colorado, rare in the Green River from its confluence with the Colorado River to the mouth of the Yampa River, and rare in the Yampa River from its mouth to Craig, Colorado. They also found evidence that the existing (1972) populations were declining, with reduced reproduction from 1968-1971. During his four year study, Holden took 300 adult squawfish from the Upper Basin; 261 (87%) from the lower Yampa River. In fact, Holden and Stalnaker (1975-a) conclude:

"The Yampa River is very important to the preservation of rare and endangered fishes in the Colorado basin primarily because all these rare forms (squawfish, humpback chub, bonytail chub, razorback sucker) are at least present in small numbers and some are apparently reproducing. Perhaps the Yampa River is the most natural large river environment left in the Colorado basin."

A few squawfish have been recently collected from smaller waters including the Duchesne, White, and San Rafael Rivers and also Plateau Creek. The significance of these individual specimens is presently being evaluated.

#### Economic Importance

Jordan (1891) identified Ptychocheilus lucius (white salmon, river salmon, Colorado salmon) as the largest and best food fish of the lower Colorado River. Minckley (1973) also stated:

"It is notable that the name 'salmon' in some context or alone, was used exclusively for Ptychocheilus, and no other names for the species were known to the (12) persons interviewed."

In fact, a fishery existed for them on the lower Colorado River until about 1910. Several people interviewed who have lived in the Colorado basin fondly remember the squawfish as being much preferred as a food fish to the local trout. According to Mrs. Phyllis Shaw of Las Vegas, Nevada, the fish were prepared by skinning the filleted half, pounding to break the small (intermuscular) bones, and then deep frying. The meat is flaky, white and sweet.

Because of the piscivorous food habits of squawfish (Vanicek and Kramer 1969) they are sometimes caught on artificial lures. The sport fishing potential of a fish that may attain 80 lbs (36 kg), hits artificial lures, and is good eating, cannot be overlooked. In addition, the piscivorous habits of this species could be considered an advantage in maintaining better predator/prey ratios. However, present fish management programs seem to place little importance on either of these potentials.

#### Life History

Several published and mimeographed papers have been written during the last few years on the biology of Colorado squawfish (Vanicek and Kramer

---

(1) rare: species collected occasionally, but with no certainty regardless of effort expended.



1969); Minckley 1973; Toney 1974; Seethaler N.D.; Behnke, 1973, and others). In general, this species has adapted to a watershed known for its variable flow, high silt loads and turbulence. Adults are big-water fish, spending most of their time in eddies, pools and protected pockets just outside of the main current. Young fish are found in quieter water, usually over silt or sand bottoms.

Gonads begin to mature during the high runoff from snow melt (April-June). Mature adults were once famous for their upstream spawning migrations, however, during the past 10 years no major spawning migrations have been reported. Holden & Stalnaker (1975-b) did report a general movement of squawfish into the mouth of the Yampa River from the Green River, presumably for spawning. Spawning can begin when water temperatures remain above 70°F (21°C) (Vanicek and Kramer 1969; Toney 1974).

The actual spawning act has never been documented for Colorado squawfish, but several authors have described the spawning behavior of northern squawfish (*Ptychocheilus oregonensis*) (see Patten and Rodman 1969). Large schools of mature individuals congregate in pools and break into smaller groups of one female and 2-4 males for final fertilization and deposition of eggs. No nest is prepared. For Colorado squawfish, egg development proceeds rapidly at 70°F (21°C), with hatching in less than four days. Newly hatched fry average 0.25 in. (6.5 mm) long (Toney 1974).

Food of young squawfish consists mainly of invertebrates (zooplankton and insect larvae). When squawfish are about 4 in. (100 mm) long, fish begin to enter into their diet and by 8 in. (200 mm), the switch-over to fish is complete (Vanicek and Kramer 1969).

With the decline of native fish populations, channel catfish have been reported as a possible dead-end alternative food source. Vanicek and Kramer (1969) cited reports of fishermen,

"Observing large, dead squawfish containing channel catfish with the spines extended and lodged in the pharynx or esophagus, which probably caused suffocation or starvation."

Cause and effect are unknown, but high correlations exist between declining squawfish populations, declining native forage fish populations and increasing introduced fish populations.

Growth rates are variable and dependent upon temperature, food availability, water quality and probably numerous other parameters. Vanicek and Kramer (1969) reported the calculated mean total length of age I fish from the Green River, Utah, to be 2.9 in. (74 mm), age VI 15.8 in. (400 mm) and age XI 24 in. (610 mm).

### Reasons for Decline

To understand the problems facing the Colorado squawfish, it is necessary to envision what the Colorado River itself was once like. Waters (1946) calls it an outlaw, savage and unpredictable of mood, known at last simply by its one unchanging color, Rio Colorado, the great Red River of the West. Seventeen hundred miles (2,700 km) long, it is cliff-bound nine-tenths of the way. In its journey to the Gulf of California, it drops over two miles (3.2 km), creating some of the most turbulent waters found on earth. Its volume is unpredictable. It can crawl past Yuma, Arizona at a mere 3,000 cubic feet per second (5100 cubic meters per minute) or roar by during the spring flood at 380,000 cubic feet per second (645,000 cubic meters per minute). It often seems more solid than fluid; it is high in mineral salts-carbonates, sulfates and chlorides of calcium, sodium and magnesium. In fact, it is so high in salts that it was long questioned whether it could safely be used for drinking water or even irrigation. And few rivers are so choked with silt. Averaging 0.62% silt content by volume, it formerly carried over 100,000 acre-feet of mountain and desert to the Gulf of California each year, forming the delta Aldo Leopold so beautifully described in "A Sand County Almanac."

Indeed, at one time the Colorado River was a harsh environment for any living thing, and the fish that evolved in its muddy, turbulent waters are unique. Some formed strangely modified backs, e.g., humpback chub (*Gila cypha*) and razorback sucker (*Xyrauchen texanus*); while others developed thin caudal peduncles, tiny scales and large, falcate fins, e.g., bonytail chub (*Gila elegans*); unique adaptations to a demanding environment. And sitting on top of the trophic pyramid, the top carnivore of the Colorado system, was the squawfish. Adapted to survive in this strange world of humpbacked fish and dynamic environmental conditions, he preyed at will on those other fishes, themselves so uniquely adapted to the Colorado River.

With the damming of the river by Hoover Dam in 1935 and then with over 20 other mainstream and tributary dams, the river's character has changed. Over much of its course, it has become a series of mill ponds, connected by clear, cold trout streams. Is it any wonder that those species, adapted to the Rio Colorado, find themselves strangely out of place in this newly created, man-made environment?

At present it seems most reasonable to relate declining squawfish numbers and range to several causes. A number of investigators believe squawfish have become extinct in the lower basin and declined drastically in the upper basin because of mainstream dams and their resultant changes on the rivers. Above the dams the newly ponded waters apparently are so foreign to Colorado squawfish that no population build-up has ever been recorded. The few individuals caught in Lake Powell (Utah) are thought to come from the riverine portion above the lake. Elimination of squawfish from these reservoirs appears to be more

direct than simply limiting reproduction, as few adults of this relatively long-lived minnow are found after impoundment. Adults of other native species (notably razorback suckers) seem to survive well in the reservoirs, but may have trouble reproducing.

In addition, squawfish also have declined in the riverine portion above some of the reservoirs (e.g., Salt River above Roosevelt Lake, Arizona; Green River above Flaming Gorge, Wyoming; San Juan River above Navajo Reservoir, New Mexico). Reasons for these disappearances are not fully understood, but they may be related to the proliferation of populations of introduced fishes. Species such as the red shiner, *Notropis lutrensis*, reidside shiner, *Richardsonius balteatus*, and green sunfish, *Lepomis cyanellus* have become established in habitats formerly occupied only by endemic fishes. These and other non-native fishes may be subjecting young Colorado squawfish to biological interactions for which they are poorly adapted due to their long isolation. In this respect, the squawfish may be similar to geographically isolated island fauna which can be quickly decimated by predation or competition from foreign species.

Below reservoirs, reasons for native fish declines are more clearly understood (Vanicek and Kramer 1969; Seethaler N.D.). In these areas, streams always undergo similar types of alterations: water temperature fluctuations and mean temperatures are reduced, seasonal and daily flow patterns are altered, turbidity declines, salinity increases and exotic fish are stocked. These influences are reported to have stopped squawfish reproduction in the Green River below Flaming Gorge Dam for 65 miles (105 km) to the confluence of the Yampa River; the Yampa River presently provides habitat for squawfish and modifies the Green River below that point (Vanicek et al., 1970; Holden and Stalnaker 1975).

The rotenone fish eradication program in 1962 carried out on the Green River in conjunction with the closure of Flaming Gorge Dam and a similar program on the San Juan River in conjunction with the closure of Navajo Dam resulted in the direct destruction of Colorado squawfish. The precise magnitude of the squawfish loss was not documented in either case. But, a reduction in squawfish numbers followed immediately by extreme habitat modification (which would limit re-population) no doubt contributed to the decline of this endemic species.

Perhaps Minckley and Deacon (1968) best summarize the problems that confront Colorado squawfish, and native Southwestern fishes in general:

"Declines in the populations of native fishes in the American Southwest are largely due to habitat changes associated with man's modification of various aquatic environments. Early decimation of the fauna was mainly a result of large-scale physical change, such as the diversion and impoundment of river and down-cutting of streams in their formerly stable floodplains...More subtle physical or chemical changes...eutrophication and other pollutional effects, and biological phenomena associated with the ever-increasing introduction of exotic species—all are accelerating the extirpation of remnant populations.

In the program discussed here, we are dealing directly with the western aquatic fauna, poorly known and viewed by many people as unimportant. These animals are difficult to observe and to exhibit, and are generally considered less worthy of preservation than organisms of value to sportsmen or to industry. Native aquatic animals of the American Southwest are unique and endemic—part of an ancient, relict fauna that provides important scientific information. Changes that have occurred and are occurring are amplified and accelerated by the scarcity of water. A great natural experiment of evolution, also amplified and perhaps accelerated by isolation in desert aquatic habitats, appears about to become an exercise in extinction, if man will have it so."

## COLORADO SQUAWFISH RECOVERY PLAN OUTLINE

**Primary Goal:** To restore and maintain self-sustaining populations of the Colorado squawfish to non-endangered status in their native ecosystem. This could result in reclassification to threatened status or if the recovery plan is sufficiently successful, to delist entirely.

1. Preserve, protect, and manage existing populations and habitats of Colorado squawfish.
  11. Prevent adverse modifications of existing habitat.
    111. Conduct studies to delineate the habitat requirements of the Colorado squawfish.
      1111. Determine chemical characteristics of the water.
      1112. Determine physical characteristics of the water.
      1113. Determine biological characteristics of the habitat.
      1114. Determine and describe other habitat components.
      1115. Determine historical habitat characteristics.
    112. Conduct I & E programs to advise the public of the value of the remaining habitat and the efforts needed to save it.
      1121. Conduct local I & E programs.
      1122. Conduct nationwide I & E programs.
    113. Enforce all laws protecting the remaining habitat of the squawfish.
      1131. Inform the necessary agencies of their enforcement responsibilities.
      1132. Inform all with proposed projects of their legal responsibilities.
    114. Monitor existing habitat.
      1141. Identify existing habitat.
      1142. Establish monitoring procedures.
      1143. Recommend monitoring agencies.
      1144. Compile and maintain a catalog of all water projects in the Colorado River drainage basin.

- 115. Identify habitat essential for the survival of the squawfish.
- 12. Prevent decline of present populations of Colorado squawfish because of direct destruction of fish.
  - 121. Determine reasons for decline of Colorado squawfish.
  - 122. Identify and monitor existing populations.
    - 1221. Establish monitoring procedures.
    - 1222. Recommend monitoring agencies and personnel.
    - 1223. Implement monitoring procedures.
  - 123. Enforce all laws protecting the Colorado squawfish. Insure that all local, state, and federal law enforcing agents can identify Colorado squawfish and distinguish them from other similar forms.
- 13. Improve present habitat where feasible.
  - 131. Prepare habitat management plans.
    - 1311. Determine improvement features necessary.
    - 1312. Determine sites for improvement features.
    - 1313. Determine techniques for improvement features.
  - 132. Implement habitat plan recommendations.
- 14. Expand on known life history information of the Colorado squawfish.
  - 141. Describe spawning requirements.
  - 142. Describe food habits and feeding behavior, age, and growth.
  - 143. Study population dynamics.
  - 144. Compile historical population data.
  - 145. Describe other life history characteristics.
- 2. Restore Colorado squawfish populations to their former range.
  - 21. Reintroduce squawfish into suitable historic habitat.

- 211. Select suitable sites based on all available habitat data.
  - 2111. Conduct site evaluations.
  - 2112. Identify former range.
  - 2113. Restore sites necessary for survival prior to reintroduction.
- 212. Obtain stock for propagation and for transplanting into suitable habitat.
  - 2121. Propagate and utilize hatchery stock.
  - 2122. Utilize wild stock.
  - 2123. Mark fish that will be stocked.
- 22. Manage reintroduced populations of Colorado squawfish.
  - 221. Monitor reintroduced populations.
    - 2211. Establish monitoring procedures.
    - 2212. Designate monitoring agencies.
    - 2213. Implement monitoring program.
  - 222. Inform public of reintroduction efforts.
    - 2221. Mount local I & E program.
    - 2222. Conduct nationwide I & E program.
- 23. Manage habitats of reintroduced populations.
  - 231. Prepare habitat management plans.
    - 2311. Determine improvement features necessary.
    - 2312. Determine sites for improvement features.
    - 2313. Determine techniques for improvement features.
  - 232. Implement habitat plan recommendations.
- 3. Acquire, propagate, and maintain captive reserve gene pools.
  - 31. Select and obtain stock.
  - 32. Develop propagation techniques.
  - 33. Select holding sites.
  - 34. Operate and maintain facilities.
- 4. Determine when non-endangered status is reached.
  - 41. Review recovery effort.
  - 42. Recommend delisting or change in classification if warranted.

## COLORADO SQUAWFISH RECOVERY PLAN NARRATIVE

The narrative section of the plan provides details describing projects and studies outlined in the step-down section. It briefly shows areas of recovery plan emphasis.

If the three major steps of the plan are accomplished, then the primary goal of restoring the Colorado squawfish to a non-endangered status in its native ecosystem will be met. The final recovery plan step will be a determination of when Colorado squawfish populations have been elevated to a non-endangered status.

**Primary Goal:** To restore and maintain self-sustaining populations of Colorado squawfish to non-endangered status in their native ecosystem.

**11. Prevent adverse modifications of existing habitat.**

Information from these studies will be used to determine which modifications will cause adverse or beneficial impacts on Colorado squawfish habitat.

**111. Conduct studies to delineate the habitat requirements of the Colorado squawfish.**

To discover the vital components of Colorado squawfish habitat, research must be performed to determine precise habitat requirements. These studies will last at least three years and be funded by the U.S. Fish and Wildlife Service, other Federal agencies, and additional parties having proposals which might impact this species.

**1111. Determine chemical characteristics of the water.**

Studies to discover and correlate water chemistry information with Colorado squawfish distribution and abundance will be performed. Information such as levels of pH, metals, dissolved gases, hardness, conductivity, and alkalinity will be collected.

**1112. Determine physical characteristics of the water.**

At the same time, temperature, turbidity, flows, and other physical characteristics of water will be ascertained.



1113. Determine biological characteristics of the habitat.

Complex biological interactions between species of fishes, diseases, certain invertebrates, and other aquatic wildlife will be investigated. Fish sampling with seines and electrofishing gear will reveal species composition and standing crops, and indicate predation, competition, or other interactions.

1114. Determine and describe other important habitat components.

Habitat characteristics such as substrate type, vegetative cover, and watershed land uses will be examined.

1115. Determine historical habitat characteristics.

From a survey of literature and past data collection efforts, such as U.S. Geological Survey records, the historical habitat of the Colorado squawfish will be described. By understanding the nature of the Colorado River system before large-scale modifications were made, recommendations concerning habitat enhancement or management can be more exacting.

112. Conduct I & E programs to advise the public of the remaining habitat and the efforts needed to save it.

These I & E programs will be implemented on a local and nationwide basis.

1121. Conduct local I & E programs.

All wildlife agencies will be asked to provide materials such as leaflets for local use concerning the protection of existing populations and habitats.

1122. Conduct nationwide I & E programs.

Federal agencies will be asked to implement and coordinate a local and nationwide I & E campaign. A movie explaining the plight of the Colorado squawfish and possibly other endemic Colorado River fishes will be produced by 1980.

113. Enforce all laws protecting the remaining habitat of the squawfish.

The objective of this activity is to prevent any additional destruction of Colorado squawfish habitat. Any federal agency contemplating any authorization or funding which could adversely affect Colorado squawfish must be informed of their legal responsibilities, under Section 7 of the 1973 Endangered Species Act.

It will be necessary to establish and maintain contact with a multitude of individuals and companies, both within and outside the government. This effort can be augmented by widespread general publicity measures such as newsarticles, media announcements, public appearances, and special mailings to key agencies. Changes in regulations and laws which affect habitat protection responsibility or new biological information which would affect activities could be disseminated.

114. Monitor existing habitat.

Habitat modifications in river sections known to contain Colorado squawfish will be recorded and photographed as they occur.

1141. Identify existing habitat.

1142. Establish monitoring procedures.

River sections known to contain Colorado squawfish will be delineated. Current habitat status (baseline data) and future modifications will be recorded and photographed via annual float trips. Note will be made of alterations from pristine fluvial conditions including water diversions and impoundments, sewage effluents, channelization, and road crossings. Vegetation types and natural backwater areas will be noted also. Field notes will be transferred to base maps.

1143. Recommend monitoring agencies.

Each state in the Colorado River drainage basin in which Colorado squawfish exist will take responsibility for or supervise habitat monitoring. Included are the Colorado Division of Wildlife, Utah Division of Wildlife Resources, and Arizona Game and Fish Department, and New Mexico Dept. of Game and Fish.

1144. Compile and maintain a catalogue of all water-related projects in the Colorado River drainage basin.

An up-to-date catalogue of all proposed, approved, implemented, and completed projects on the Colorado River and its tributaries will be maintained. This project is indispensable to the habitat monitoring effort.

115. Identify habitat essential for the survival of the squawfish.

12. Prevent decline of present populations of Colorado squawfish because of direct destruction of fish.

Existing populations must be maintained or enhanced where possible. It is necessary to monitor reproductive success, enforce regulations prohibiting take, and prepare habitat management plans.

121. Determine reasons for the decline of the Colorado squawfish.

The historical and recent causes for the reductions in numbers and range will be documented. Although some answers are lacking, the decline is fairly well documented and understood. This information is available in published and unpublished reports.

122. Identify and monitor existing populations.

The reproductive success and relative abundance of Colorado squawfish will be monitored annually until the species is delisted.

1221. Establish monitoring procedures.

Trend zones in the Colorado River drainage will be established where Colorado squawfish are known to exist. Trend zone selection will be based on two criteria; first, the presence of Colorado squawfish within recent years, and second, the accessibility of the area to a field crew. Float trips through such trend zones (16 to 24 km) will be conducted annually. Areas in Colorado are: 1) the Gunnison River from Whitewater, Colorado, downstream to Grand Junction, Colorado; 2) the Colorado River from the confluence of Plateau Creek downstream to Clifton, Colorado; 3) the Yampa River from the confluence of the Little Snake River downstream to Deerlodge Park in Dinosaur National Monument; and 4) the Yampa

River from Lay, Colorado, downstream to Sunbeam, Colorado. Areas in Utah include: 1) the Green River from Jensen, Utah, downstream to Ouray, Utah; 2) the Green River from the confluence of the Price River downstream to Green River, Utah; 3) the Green River from the Mineral Canyon access downstream 20 km to a point in Canyonlands National Park; 4) the Colorado River from Dewey Bridge downstream to Moab Utah; and 5) the San Juan River from Bluff, Utah, downstream to Mexican Hat, Utah. In Arizona, the Salt River from the confluence of the White River and Black River downstream to the State Rt. 288 bridge will be monitored. Backwater nursery areas will be sampled with seines and dip nets for evidence of young-of-the year and juvenile Colorado squawfish each fall. Indices of relative abundance in sequential years will be established.

1222. Recommend monitoring agencies and personnel.

Each state in the Colorado River drainage basin in which Colorado squawfish occur will take responsibility for or supervise population monitoring. Included are the Colorado Division of Wildlife, Utah Division of Wildlife Resources, and the Arizona Game and Fish Department, and cooperating federal agencies.

1223. Implement monitoring procedures.

Implemented on an annual basis until the species is declassified. These efforts must be closely coordinated with the habitat studies indicated under 111.

123. Enforce all laws protecting the Colorado squawfish.

Insure that all local, state, and federal law enforcement agents can identify Colorado squawfish and distinguish them from similar sympatric species. A simple taxonomic key and some drawings in leaflet form are appropriate. All laws prohibiting take, harvest, or possession must be enforced.

13. Improve present habitats where feasible.

This important element of the plan appears to be quite expensive and involved. The extensive nature of the habitat,

multiplicity of agencies and developers involved, and the issues of energy development create a complex situation.

131. Prepare habitat management plans.

Such plans can be prepared after habitat requirements, reasons for decline and existing population levels are estimated. Agencies with land, water and wildlife management responsibilities will devise appropriate habitat management plans. Preparation will begin in 1979 and proceed through 1980. Plans will indicate approximate funding levels and timetables for completion.

1311. Determine improvement features necessary.

Habitat modifications to benefit Colorado squawfish can be proposed when limiting factors are better understood. Example of suspected limiting factors are domination of microhabitats by introduced fishes, adverse manipulations of discharge and temperature, and water pollution.

1312. Determine sites for improvement features.

Exact sites will be pinpointed at a later date. The recovery team will make recommendations for habitat improvement projects, and work with the implementing agencies through the U.S. Fish and Wildlife Service.

1313. Determine techniques for improvement features.

Techniques for improvement of the Colorado River system as Colorado squawfish habitat can only be proposed when the features needed are better known. This information will be included in the recovery plan in the form of an addendum.

132. Implement habitat plan recommendations.

Beginning in 1980, plans will be implemented by agencies with land and water resource management responsibilities.

14. Expand on known life history information of the Colorado squawfish.

Studies will be contracted through competent investigators. Because of the precarious status of existing populations, every effort should be made to maximize the scientific or other uses of sacrificed fish. All aspects of the life history of Colorado squawfish will be described.

141. Describe spawning requirements.

The spawning act for Colorado squawfish has never been described, but hatchery culture of the species has been accomplished. Understanding of this life history requirement is vital to the recovery effort. Observation of hatchery brood fish, tracking wild fish with sonar or radio tags, and other non-lethal techniques will be employed.

142. Describe food habits and feeding behavior and age and growth.

Some information has already been collected, but further investigations are necessary to evaluate life history requirements. This phase of the recovery effort can be performed in natural habitats and perhaps refugia.

Preserved specimens, hatchery-reared fish and wild fish will be studied by collecting scale samples, length and weight data, and non-lethal stomach samples.

143. Study population dynamics.

Field studies to determine competition, predation, and other biological interactions will be closely coordinated with other aspects of the plan.

144. Compile historical population data.

Historical aspects of population abundance, distribution, migration and the life history, and other general biological information will be synthesized. Published and unpublished reports, newspaper stories, and knowledgeable persons with specific information about local areas will be checked.

2. Restore Colorado squawfish populations to their former range.

It will be necessary to stock fish into suitable sites, and to manage the habitats and populations of reintroduced Colorado squawfish.

21. Reintroduce Colorado squawfish into suitable historic habitat.

Colorado squawfish have been reared at the Willow Beach National Fish Hatchery. A hatchery coding system has been developed to consider genetic differences of geographically separated populations.

211. Select suitable sites based on all available habitat data.

2111. Conduct site evaluations.

An evaluation of the characteristics of each potential stocking site will be conducted and based upon information gathered from habitat studies in 111.

2112. Identify former range.

From literature searches, interviews with long-time residents, examinations of museum specimens and records, and other methods, the former range of the Colorado squawfish will be determined.

2113. Restore sites necessary for survival prior to reintroductions.

Habitat enhancement features will be considered. These improvements could include physical modification of the habitat such as addition of large boulders for cover, or biological modifications such as removal of non-native fish species until Colorado squawfish have had chance to reestablish themselves. Land and water resource agencies who have management responsibilities in the enhancement areas should supply funds and manpower. Target dates and funding levels will be recommended at a later date, yet far enough in advance so proper allocations can be made by the participating agencies.

212. Obtain stock for propagation and for transplanting into suitable habitat.

Both wild and hatchery-reared fish may be used.

2121. Propagate and utilize hatchery stock.

Fish for restocking will be propagated at the Willow Beach National Fish Hatchery or other federal or state hatcheries. The propagation effort has been underway since 1973 when eight adults were taken to WENFH and several thousand young were produced.

2122. Utilize wild stock.

In addition to stocking hatchery-reared fish, it may be necessary to use wild fish in order to help maintain genetic diversity.

2123. Mark fish that will be stocked.

Planted fish may be marked before release into the

wild. A relatively harmless marking agent such as tetracycline dye in artificial diets may be used. It is recognized that other permanent marking techniques might work better under certain conditions.

22. Manage reintroduced populations of Colorado squawfish.

221. Monitor reintroduced populations.

2211. Establish monitoring procedures.

Restocked areas will be sampled by standard fishery techniques to follow survival, age, growth, etc.

2212. Designate monitoring agencies.

State wildlife agencies will be responsible for population monitoring.

2213. Implement monitoring program.

Implemented as necessary until the species is declassified.

222. Inform public of reintroduction efforts.

Local and national campaigns to publicize the reintroduction efforts are necessary. This I & E effort is addressed in 1121 and 1122.

2221. Mount local I & E program.

Utilize news releases, bulletins, and other means to publicize reintroduction efforts.

2222. Conduct nationwide I & E program.

Utilize nationwide media to publicize reintroduction efforts.

23. Manage habitats of reintroduced populations.

Similar to 13, except that only two habitat management plans will be needed. Details of the proposed habitat management plans will be attached to the recovery plan in the form of addenda. Implementing agencies, in coordination with the recovery team, will devise habitat management plans.



231. Prepare habitat management plans.

2311. Determine improvement features necessary.

2312. Determine sites for improvement features.

2313. Determine techniques for improvement features.

232. Implement habitat management plan recommendations.

3. Acquire, propagate, and maintain captive, reserve gene pools.

It is necessary to keep and maintain a captive, reserve gene pool in case some unfortunate accident should extirpate the wild populations.

31. Select and obtain stock.

Stock may be acquired from existing hatchery sources or from wild stocks.

32. Develop propagation techniques.

The objective of this effort is genetic protection, not large-scale hatchery production. However, excess offspring could be returned to the wild. Genetic variability of captive stock will be maintained by annual additions of wild fish.

33. Select holding sites.

Several hatcheries have been recommended besides the Willow Beach National Fish Hatchery including the Hotchkiss National Fish Hatchery and Chino Fish and Wildlife Base (holding ponds).

34. Operate and maintain facilities.

Management of the refugia will be a U.S. Fish and Wildlife Service responsibility and/or the state agencies.

4. Determine when non-endangered status is reached.

41. Review recovery effort.

42. Recommend delisting or change in classification if warranted.

If the primary recovery plan goal has been met, it will be recommended to the Secretary of the Interior that the Colorado squawfish be delisted to a non-endangered status.

## ABBREVIATIONS FOR AGENCIES

Abbreviations

AG&amp;FD

CDOW

CDF&amp;G

NDF&amp;G

NMDG&amp;F

UDWR

WG&amp;FD

State Agencies

Arizona Game and Fish Department

Colorado Division of Wildlife

California Department of Fish and Game

Nevada Department of Fish and Game

New Mexico Department of Game &amp; Fish

Utah Division of Wildlife Resources

Wyoming Game and Fish Department

Abbreviations

BIA

BLM

BOR

BR

NPS

USFS

USFW

Federal Agencies

Bureau of Indian Affairs

Bureau of Land Management

Bureau of Outdoor Recreation

Bureau of Reclamation

National Park Service

U.S. Forest Service

U.S. Fish and Wildlife Service

| Priority | Task   | Agency  | Cost/Unit    | Unit    | Coordinator | Year  |   |   |   |   |
|----------|--|---|--------------|---------|-------------|---|---|---|---|---|
|          |  |   |              |         |             | 1st   | 2nd   | 3rd   | 4th   | 5th   |
| 1        | 111. Habitat requirement studies.  | USFWS<br>BR<br>BLM<br>USFS<br>UDWR<br>CDOW<br>NADGAF<br>NPS |              |         | USFWS       | 25,000<br>25,000<br>25,000<br>25,000<br>25,000<br>2,000     | 25,000<br>25,000<br>25,000<br>25,000<br>25,000<br>2,000     | 25,000<br>25,000<br>25,000<br>25,000<br>25,000<br>2,000     |   |   |
| 1<br>2   | 1121. Conduct local I & E programs<br>222. Inform public of reintroduction<br>efforts. | AGAFD<br>CDOW<br>CFRAG<br>NADGAF<br>UDWR<br>NADGAF<br>NPS   | 1.00/Leaflet | Leaflet | STATES      | 1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000 | 1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000 | 1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000 | 1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000 | 1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000<br>1,000 |
| 1<br>2   | 1122. Create a movie about<br>2222. Colorado squawfish                                 | USFWS<br>USFS<br>BLM<br>BR<br>NPS                           | 35,000/Movie | Movie   | USFWS       | 7,000<br>7,000<br>7,000<br>7,000<br>7,000                   |   |   |   |   |
| 1        | 113. Enforce all laws protecting the<br>remaining habitat of the squawfish.            | USFWS   |              |         | USFWS       | 50,000  | 50,000  | 50,000  | 50,000  | 50,000  |

## PROPOSED BUDGET -- SUMMARIZED BY JOB

| Priority | Task   | Agency  | Cost/Unit     | Unit     | Coordinator             | Year  |   |   |   |   |
|----------|--|---|---------------|----------|-------------------------|---|---|---|---|---|
|          |  |   |               |          |                         | 1st   | 2nd   | 3rd   | 4th   | 5th   |
| 2        | 114. Monitor existing habitat.<br>1141. Identify existing habitat.<br>1142. Establish monitoring procedures.<br>1143. Recommend monitoring agency. | BLM<br>CDOW<br>UDWR<br>NHDG&F<br>AG&FD<br>USFS                      |               |          | EACH<br>STATE<br>AGENCY | 5,000<br>5,000<br>5,000<br>5,000<br>5,000<br>5,000                                | 5,000<br>5,000<br>5,000<br>5,000<br>5,000<br>5,000                                | 5,000<br>5,000<br>5,000<br>5,000<br>5,000<br>5,000                                | 5,000<br>5,000<br>5,000<br>5,000<br>5,000<br>5,000                                | 5,000<br>5,000<br>5,000<br>5,000<br>5,000<br>5,000                                |
| 2        | 1144. Water projects catalogue   | USFWS<br>(Contract)<br>BR   |               |          | USFWS                   | 5,000   | 1,000   | 1,000   | 1,000   | 1,000   |
| 2        | 121. Determine reasons for decline of the<br>Colorado squawfish.   | USFS  |               |          | USFWS                   | 5,000   | 1,000   | 1,000   | 1,000   | 1,000   |
| 2        | 122. Monitor existing populations  | CDOW<br>NHDG&F<br>UDWR<br>AG&FD<br>BIA<br>BLM<br>BR<br>NPS<br>USFWS |               |          | EACH<br>STATE<br>AGENCY | 8,000<br>4,000<br>8,000<br>4,000<br>5,000<br>22,000<br>20,000<br>15,000<br>22,000 | 8,000<br>4,000<br>8,000<br>4,000<br>5,000<br>22,000<br>20,000<br>15,000<br>22,000 | 8,000<br>4,000<br>8,000<br>4,000<br>5,000<br>22,000<br>20,000<br>15,000<br>22,000 | 8,000<br>4,000<br>8,000<br>4,000<br>5,000<br>22,000<br>20,000<br>15,000<br>22,000 | 8,000<br>4,000<br>8,000<br>4,000<br>5,000<br>22,000<br>20,000<br>15,000<br>22,000 |
| 1        | 123. Create identification brochure to<br>aid law enforcement.   | USFWS   | 1.00/Brochure | Brochure | USFWS                   | 2,000   |   |   |   |   |

| Priority | Task  | Agency | Cost/Unit | Unit | Coordinator                        | Year   |        |        |        |        |  |
|----------|---|--------|-----------|------|------------------------------------|--------|--------|--------|--------|--------|--|
|          |   |        |           |      |                                    | 1st    | 2nd    | 3rd    | 4th    | 5th    |  |
| 3        | 131. Prepare habitat management plans.<br>(HMP's) | BIA    |           | Plan | USFWS                              |        |        | 20,000 | 16,000 | 16,000 |  |
|          |   | BLM    |           |      |                                    |        |        | 40,000 | 40,000 | 40,000 |  |
|          |   | BR     |           |      |                                    |        |        | 50,000 | 40,000 | 40,000 |  |
|          |   | NPS    |           |      |                                    |        |        | 30,000 | 25,000 | 25,000 |  |
|          |   | USFWS  |           |      |                                    |        |        | 10,000 | 8,000  | 8,000  |  |
| 4        | 132. Implement HMP's.                             | USFWS  |           |      | Appropriate resource mgmt. agency. |        |        | 10,000 | 8,000  | 8,000  |  |
|          |   | CDOW   |           |      |                                    |        |        | 10,000 | 8,000  | 8,000  |  |
|          |   | NHOG&F |           |      |                                    |        |        | 10,000 | 8,000  | 8,000  |  |
|          |   | UDNR   |           |      |                                    |        |        | 10,000 | 8,000  | 8,000  |  |
|          |   | AG&FD  |           |      |                                    |        |        | 10,000 | 8,000  | 8,000  |  |
| 2        | 14. Life history studies.                         | CDOW   |           |      | USFWS                              | 10,000 | 25,000 | 10,000 |        |        |  |
|          |   | UDNR   |           |      |                                    | 10,000 | 10,000 | 10,000 |        |        |  |
|          |   | USFWS  |           |      |                                    | 10,000 | 10,000 | 35,000 | 10,000 | 10,000 |  |
|          |   | AG&FD  |           |      |                                    | 10,000 |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        |        |        |  |
|          |   | UDNR   |           |      |                                    |        |        |        |        |        |  |
|          |   | USFWS  |           |      |                                    |        |        |        |        |        |  |
|          |   | AG&FD  |           |      |                                    |        |        |        |        |        |  |
|          |   | CD&AG  |           |      |                                    |        |        |        |        |        |  |
|          |   | NHOG&F |           |      |                                    |        |        |        |        |        |  |
|          |   | CDOW   |           |      |                                    |        |        |        | </     |        |  |

## PROPOSED BUDGET -- SUMMARIZED BY JOB

| Priority | Task   | Agency     | Cost/Unit | Unit | Coordinator | Year  |        |        |        |        |
|----------|--|------------|-----------|------|-------------|---|--------|--------|--------|--------|
|          |  |            |           |      |             | 1st   | 2nd    | 3rd    | 4th    | 5th    |
| 3        | 21. Re-introduce Colorado squawfish<br>211. Select suitable sites<br>2111. Conduct site evaluations. | AG&FD      |           |      | USFWS       | 300   | 300    | 300    | 300    | 300    |
|          |  | COF&G      |           |      |             | 300   | 300    | 300    | 300    | 300    |
|          |  | IND&GAF    |           |      |             |   |        |        |        |        |
|          |  | NOF&G      |           |      |             |   |        |        |        |        |
| 3        | 2112. Identify former range  | COOH       |           |      | USFWS       |   |        |        |        |        |
|          |  | UDNR       |           |      |             |   |        |        |        |        |
|          |  | USFWS      |           |      |             |   |        |        |        |        |
|          |  | NG&FD      |           |      |             |   |        |        |        |        |
| 3        | 2113. Restore unoccupied sites prior<br>to reintroductions.  | USFWS      |           |      | USFWS       | This has been accomplished under Western<br>Energy and Land Use Contract. |        |        |        |        |
|          |  | (Contract) |           |      |             |   |        |        |        |        |
|          |  | BIA        |           |      |             |   |        |        |        |        |
|          |  | BR         |           |      |             |   |        |        |        |        |
| 1        | 212. Propagation and procurement of trans-<br>planting stock   | BLM        |           |      | USFWS       | PLAN PREPARATION MUST<br>PRECEDE ESTIMATES OF<br>RESTORATION COSTS.       |        |        |        |        |
|          |  | NPS        |           |      |             |   |        |        |        |        |
|          |  | USFS       |           |      |             |   |        |        |        |        |
|          |  | USFWS      |           |      |             |   |        |        |        |        |
| 1        | 212. Propagation and procurement of trans-<br>planting stock   | AG&FD      |           |      | USFWS       | 500   | 500    | 500    | 500    | 500    |
|          |  | COOH       |           |      |             | 1,000   | 1,000  | 1,000  | 1,000  | 1,000  |
|          |  | COF&G      |           |      |             | 500   | 500    | 500    | 500    | 500    |
|          |  | NOF&G      |           |      |             | 500   | 500    | 500    | 500    | 500    |
| 1        | 212. Propagation and procurement of trans-<br>planting stock   | UDNR       |           |      | USFWS       | 500   | 500    | 500    | 500    | 500    |
|          |  | USFWS      |           |      |             | 45,000  | 45,000 | 45,000 | 45,000 | 45,000 |
|          |  |            |           |      |             |   |        |        |        |        |
|          |  |            |           |      |             |   |        |        |        |        |

## PROPOSED BUDGET -- SUMMARIZED BY JOB

| Priority | Task  | Agency   | Cost/Unit | Unit | Coordinator                              | Year  |   |   |   |   |
|----------|---|--|-----------|------|--|---|---|---|---|---|
|          |   |  |           |      |  | 1st   | 2nd   | 3rd   | 4th   | 5th   |
| 4        | 221. Monitor reintroduced fish.                     | AG&FD<br>CDF&G<br>NDF&G<br>NWD&GAF<br>CDOW<br>UDWR<br>NG&FD<br>USFWS |           |      | EACH<br>STATE<br>AGENCY                  | 300<br>300<br>300<br>300<br>300             | 300<br>300<br>300<br>300<br>300             | 300<br>300<br>300<br>300<br>300             | 300<br>300<br>300<br>300<br>300   | 300<br>300<br>300<br>300<br>300             |
| 2        | 231. Prepare HWP's for re-introduction sites.       | AG&FD<br>CDOW<br>CDF&G<br>NDF&G<br>NWD&GAF<br>UDWR<br>WG&FD          |           |      | USFWS                                    |   |   |   |   |   |
| 3        | 232. Implement HWP's.                               | BIA<br>BLM<br>BOR<br>BR<br>NPS<br>USFS<br>USFWS                      |           |      | Appropriate<br>resource mgmt.<br>agency. |   |   |   | ESTIMATION OF COSTS<br>SIMILAR TO 13, BUT NOT<br>POSSIBLE AT THIS TIME. |   |
| 3        | 3. Acquire stock and facility.                      | AG&FD<br>CDOW<br>CDF&G<br>UDWR<br>USFWS                              |           |      | USFWS                                    | 1,000<br>10,000<br>1,000<br>1,000<br>50,000 | 1,000<br>10,000<br>1,000<br>1,000<br>50,000 | 1,000<br>10,000<br>1,000<br>1,000<br>50,000 | 1,000<br>10,000<br>1,000<br>1,000<br>50,000                             | 1,000<br>10,000<br>1,000<br>1,000<br>50,000 |
| 4        | 4. Determine when non-endangered status is reached. | USFWS  |           |      | USFWS                                    |   |   |   |   |   |

Literature Cited

- Behnke, R.J. 1973. Colorado squawfish Ptychocheilus lucius. 9 pp mimeo.
- Branson, B.A., M.E. Sisk and C.J. McCoy, Jr. 1966. Ptychocheilus lucius from the Salt River, Arizona. Southwest Nat. 11:300.
- Conway, M. 1975. New Mexico's endangered fishes. New Mexico Wildlife (May/June): 18-24.
- Everhart, W.H. and W.R. Seaman. 1971. Fishes of Colorado. Colo. Game, Fish and Parks Div., Denver. 75 pp.
- Holden, P.B. 1973. Distribution, abundance and life history of the fishes of the Upper Colorado River Basin. Ph.D. dissertation, Utah State University, Logan. 58 pp.
- Holden, P.B. and C.B. Stalnaker. 1975-a. Distribution of fishes in the Dolores and Yampa river systems of the Upper Colorado Basin. Southwest. Nat. 19(4): 403-412.
- Holden, P.B. and C.B. Stalnaker. 1975-b. Distribution and abundance of mainstream fishes of the middle and upper Colorado River basins, 1967-1973. Trans. Amer. Fish. Soc. 104(2): 217-231.
- Johnson, J.E. 1976. Status of endangered and threatened fish species in Colorado. Bur. Land Mgt. Tech. Note No. 280. 28 pp.
- Jordan, D.S. 1891. Report of explorations in Colorado and Utah during the summer of 1889, with an account of the fishes found in each of the river basins examined. Bull. U.S. Fish Comm. 89(1): 1-40.
- Koster, W.J. 1957. Guide to the fishes of New Mexico. Univ. of New Mexico Press, Albuquerque, New Mexico. 116 pp.
- LaRivers, I. 1962. Fishes and fisheries of Nevada. Nevada State Game and Fish Comm. 782 pp.
- Lemons, D.G. 1954. A field survey of western Colorado streams and lakes. Colorado Department of Fish and Game, Denver. 29 pp.
- Miller, R.R. 1961. Man and the changing fish fauna of the American Southwest. Pap. Michigan Acad. Sci., Art, Lett. 46: 365-404.
- Miller, R.R. and C.H. Lowe. 1964. An annotated checklist of the fishes of Arizona. Pages 133-151 in C.H. Lowe, ed. The vertebrates of Arizona. Univ. Arizona Press, Tucson.



- Minckley, W.L. 1973. Fishes of Arizona. Ariz. Game and Fish, Phoenix, Ariz. 293 pp.
- Minckley, W.L. and J.E. Deacon. 1968. Southwestern fishes and the enigma of "Endangered Species." Science of 159(3822): 1424-1432.
- Patten, B.G. and D.T. Rodman. 1969. Reproductive behavior of northern squawfish (Ptychocheilus oregonensis). Trans. Am. Fish Soc. 98(1): 108-110.
- Seethaler, K. N.D. Investigation of the movement and ecological requirements of the Colorado squawfish and humpback sucker in the Yampa and Upper Green River. 12 pp. mimeo.
- Stalnaker, C.B. and P.B. Holden 1973. Changes in native fish distribution in the Green River System, Utah-Colorado. Utah Acad. Proc. 50(1): 25-32.
- Toney, D.P. 1974. Observations on the propagation and rearing of two endangered fish species in a hatchery environment. Proc. West. Assoc. State Game and Fish Comm. 54:252-259.
- Vanicek, C.D. and R.H. Kramer. 1969. Life history of the Colorado squawfish, Ptychocheilus lucius, and the Colorado chub, Gila robusta, in the Green River in Dinosaur National Monument, 1964-1966. Trans. Amer. Fish Soc. 98(2): 193-208.
- Vanicek, C.D., R.H. Kramer and D.R. Franklin. 1970. Distribution of Green River fishes in Utah and Colorado following closure of Flaming Gorge Dam. Southwest Nat. 14(3): 297-315.
- Vanicek, et. al. 1970.
- Waters, F. 1946. The Colorado. Holt, Rinehart and Wilson, New York. 400 pp.

## 8. HOUSTON TOAD

### Question:

Why did the Service propose the designations of critical habitat within downtown Houston?

On November 3, 1976, Dr. Robert A. Thomas, then of Texas A & M University, recommended the following areas in Harris County as Critical Habitat for the Houston toad based on his work under contract to the Fish and Wildlife Service to determine the present status of remaining populations of the toad:

Harris County. - (1) An area bounded on the east by state highway 146, on the west by state highway 288, on the north by state highway 225 and Interstate 610 (south loop), and on the south by Clear Creek and Clear Lake. (2) An area bounded on the east by Campbell Road, on the west by Brittmore Road, on the north by Tanner Road, and on the south by Kempwood Road.

The Office of Endangered Species felt that the recommendations of Dr. Thomas were too broad in south Houston and did not accurately reflect Critical Habitat. Therefore, his recommendations were modified to include areas of either known historical records or areas with large tracts of suitable sandy soils (from a soil profile map) adjacent to areas of historical records. Actually none of the areas of proposed Critical Habitat were located in downtown Houston.

All populations of Houston toads were included as Critical Habitat to preserve the genetic uniqueness of the three isolated populations of the species.

**Question:**

Did the Service have any information that the toad existed in any of the proposed critical habitat areas in Houston?

HARRIS COUNTY, (Site C of the proposal) - This locale, bound by Tanner, Gessner, Clay, and Brittmoore streets includes approximately 1,000 acres. It has been grazed by livestock since at least the mid-1940's and includes the type locality for the Houston toad, first described in 1953 by Ottys Sanders. John Wottring collected the specimens used by Sanders in 1948 through 1950. The soils are sandy throughout the area and drainage poor. Temporary ponds are scattered throughout the central portion of the plot. During the mid-1950's Houston toads were often collected from this site by Dr. Frank Blair. Dr. Lauren Brown failed to find Houston toads at this locality during his 1965-1967 collections. Mr. William McClure has concentrated on this area, and in three years has located hybrid toads calling from the central ponds area only once, in Spring 1976. This is the last known Houston toad observation from the type locality.

Two of the landowners met the Houston toad habitat review team as they reviewed this site. David Wolff owns 100 acres in the southwest and Ken Kehrer represented Affiliated Capital Corp. that owns a larger block to the north and east of the Wolff property. The Wolff property had been recently plowed and was being graded with a clay based soil while the team was there. Mr. Wolff informed the Service that underground drainage had recently been installed on his property and evaluated his 100 acres in excess of \$3 million.

Additional development on this site includes a small apartment complex rapidly being built at the southeast corner, a portion of Gessner Road is being widened, and a large road is planned for the west central portion. Plans indicate the entire area will eventually be developed.

This site is presently undergoing rapid development and its future as toad habitat is already questionable because of the extensive underground drainage recently installed. Unless immediate action is taken to modify drainage plans, the central area of this site will lose its temporary ponding conditions. At this point the area will no longer meet the criteria as suitable habitat for the Houston toad.

HARRIS COUNTY, Site D-1 of the proposal - The Sharpstown Shopping Center site is the most developed of all the proposed Critical Habitat localities. The shopping center takes up all of the southern boundary along Bellaire Boulevard. Large apartment complexes encroach from Fondren Road and the northeast tip contains an industrial park. Of the estimated 614 acres at this site, the only remaining suitable habitat for the toad is in the north central area where 100-200 acres of open, sandy fields await development.

No toad sightings have ever been recorded from this site, although soil profile maps indicate that this area supports a large tract of

sandy soil preferred by the Houston toad. Because of extensive development, this area was dropped from further consideration in the Federal Register of January 31, 1978 (attached).

HARRIS COUNTY, Site D-2 of the proposal - This area is estimated at nearly 7,000 acres and is bounded by Almeda, West Orem, Holmes, Main, and Hillcroft roads and Sims Bayou. The majority of the soils are clay based and unsuitable for the toad. Oil wells and salt water leaching have destroyed most of the area to the north and east, and general conditions of the entire site are very unfavorable for Houston toads.

Only one small sandy area west of South Post Oak Road appears to be suitable habitat, but no records of Houston toads exist anywhere on the site. Soil profile maps furnished to the Service indicated that this entire area held suitable sandy soils for Houston toads. The soil profile map was found to be in error however and this area was dropped from further consideration in the Federal Register of January 31, 1978 (attached).

HARRIS COUNTY, Site D-3 of the proposal - This small plot (142 acres) is bounded by Shawnee Road, Edgebrook Drive, and the Gulf Freeway. A small shopping center is located in the southern point and a few homes border Shawnee to the south. However, most of the plot is open field. The soils are of a clay base and temporary pond areas are not present. A permanent water drainage ditch extends along the northern border.

A call identification of a Houston toad was made in this area in May 1975. It is not known if this individual represented a population or merely a migrant, as no other Houston toads have been reported from this site. However, this is one of the last verified observations from Harris County.

HARRIS COUNTY, Site D-4 of the proposal - This site is relatively small (657 acres) and generally bounded by Vista, Crenshaw, Young and Maple roads. There are several older subdivisions throughout the site, but most have open-drainage, small fields, and a rather rural atmosphere. The soils are suitable. Little new development is evident except for roadwork along Vista Road. An available city map shows several new roads planned for the area.

The last Houston toad collected in Harris County was taken from this site on June 27, 1976, in an open field between Burke and Arapajo roads. The specimen was positively identified, photographed, and released.

HARRIS COUNTY, Site D-5 of the proposal - This site contains nearly 6,100 acres and is generally bounded by the Gulf Freeway, West Fuqua, and Martindale roads and Hobby Airport. Sandy soils and temporary ponds are found throughout the site. Development varies from shopping centers, subdivisions, drive-in theaters, junkyards, and private stores along the major streets (Gulf Freeway, Telephone, and Mykawa roads) to open fields and

pastures towards the central areas. Toad observations were quite numerous in the eastern lobe of this site during the late 1940's to early 1960's by an amateur herpetologist (John C. Wottring) who lived in the neighborhood. No recent observations have been reported from the site for at least the last three years and perhaps longer. However, little effort has been made to locate toads. No observations have ever been recorded in the area west of Telephone Road which encompasses about 40% of the site.

Future development in this area seems much slower than Site 1. Housing developments in the center "neck" portion of the plot and in the southeast appear stable, with little new building started. A sand pit operation in the east central portion is quite active as is building around Alameda Shopping Center. Several of the roads shown on the county map are proposed rather than completed.

HARRIS COUNTY, Site D-6 of the proposal - The proposed site encompasses approximately 3,000 acres bounded by Ellington AFB, Horsepen Bayou, and the Houston-Pasadena city limits. Most of the proposed area is owned by Friendswood Development Corp., a subsidiary of Exxon, which has developed several additions in the surrounding Clear Lake City area including two (Brookforest and Middlebrook) within the proposed Critical Habitat. Clear

Lake Oil Field is located in the northeast portion of the proposed habitat, but little conflict between the wells and toad are anticipated. A city map of Clear Lake City, printed in July 1977, indicates the remaining proposed area as recreational rather than residential, but proposed roads indicate future plans for the area may be residential.

The soils throughout the area are suitable and temporary pond sites are available. No toad has ever been collected from the area, but an Air Force employee and amateur herpetologist (John C. Wottring) identified Houston toad calls from the area immediately east of Ellington AFB in 1952 and 1953. Since those observations only one other attempt to locate toads (in 1975) occurred--no toads were heard.

#### CONCLUSION

Sites D-1 and D-2 of the original proposal were dropped from consideration by the Service in its final determination of Critical Habitat for the Houston toad in Bastrop and Burleson Counties. It is likely that all remaining areas in Harris County will be dropped from consideration in the future.



## HOUSTON TOAD CRITICAL HABITAT

The following areas represent critical habitat for extant populations of the Houston toad (Bufo houstonensis Sanders) in Texas:

- a. Bastrop County. - Bounded on the east by a line corresponding to  $97^{\circ}7'30''$  W, on the west by a line following (for the most part) state highway 95, on the north by a line corresponding to  $30^{\circ}12'00''$ , and on the south by the north bank of the Colorado River.
- b. Burleson County. - Roughly defined as one mile in each direction from the north entrance to Lake Woodrow from Texas FM 2000. Specifically defined by the following coordinates:  $30^{\circ}35'30''$  to  $30^{\circ}37'15''$  N and  $96^{\circ}40'00''$  to  $96^{\circ}42'15''$  W.
- c. Harris County. - (1) An area bounded on the east by state highway 146, on the west by state highway 288, on the north by state highway 225 and Interstate 610 (south loop), and on the south by Clear Creek and Clear Lake. (2) An area bounded on the east by Campbell Road, on the west by Brittmore Road, on the north by Tanner Road, and on the south by Kempwood Road.

Submitted by:

Robert A. Thomas  
Robert A. Thomas  
3 November 1976

## RULES AND REGULATIONS

Mr. Keith M. Schreiner, Associate Director-Federal Assistance, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240, 202-343-4646.

## SUPPLEMENTARY INFORMATION:

## BACKGROUND

In the Federal Register of May 26, 1977 (42 FR 27009-27011), the Fish and Wildlife Service published a proposed determination of critical habitat for the Houston toad (*Bufo houstonensis*). This critical habitat was described as:

(A) *Bastrop County*. From the junction of a line corresponding to 30°12'00" N. and Texas State Highway 95 east along a line corresponding to 30°12'00" N. to where it intersects a line corresponding to 97°7'30" W. to where it intersects the Colorado River, west and northwest along the north bank of the Colorado River to the city limits of Bastrop, and north through Bastrop along Texas State Highway 95 to where it intersects a line corresponding to 30°12'00" N.

(B) *Burleson County*. A circular area with a one mile radius, the center being the north entrance to Lake Woodrow from Texas FM 2000.

(C) *Harris County*. At the northwest corner of Houston, Tex., from the junction of Tanner and Brittmoore Roads east on Tanner Road to its junction with Gessner Road, south on Gessner Road to its junction with Clay Road, west on Clay Road to its junction with Brittmoore Road, and north on Brittmoore Road to its junction with Tanner Road.

(D) *Harris County*. Six areas in south Houston and Pasadena, Tex. (1) From the junction of Harwin Drive and Fondren Road east on Harwin Drive to its junction with the Southwest Freeway, southwest on the Southwest Freeway to its junction with Fondren Road, and north on Fondren Road to its junction with Harwin Drive.

(2) From the junction of Hillcroft Avenue and South Main Street northeast on South Main Street to its junction with Holmes Road, northeast on Holmes Road to its junction with Knight Road, south on Knight Road to its junction with Alameda Road, northwest on Alameda Road to its junction with West Orem Drive, west on West Orem Drive to its junction with South Post Oak, south on South Post Oak to its junction with Sims Bayou, west along the north bank of Sims Bayou to where it crosses Hillcroft Avenue, and north on Hillcroft Avenue to its junction with South Main Street.

(3) From the junction of the Gulf Freeway and Shawnee Drive east on Shawnee Drive to its junction with Rodney, south on Rodney to its junction with Edgebrook Drive, southwest

on Edgebrook Drive to its junction with the Gulf Freeway, and northwest on the Gulf Freeway to its junction with Shawnee Drive.

(4) From the junction of Vista Road and Maple east on Vista Road to its junction with Watters Road, south on Watters Road to its junction with Crenshaw Road, west on Crenshaw Road to its junction with Young, north on Young to its junction with Snodden Avenue, east on Snodden Avenue to its junction with Maple, and north on Maple to its junction with Vista Road.

(5) From the junction of Carson and Martindale south on Martindale to its junction with Alameda-Genoa Road, east on Alameda-Genoa Road to its junction with Mykawa Road, south on Mykawa Road to its junction with Clear Creek, east along the north bank of Clear Creek to where it crosses Telephone Road, north on Telephone Road to its junction with Fuqua, east on Fuqua to its junction with the Gulf Freeway, northwest on the Gulf Freeway to its junction with Meldrum, west on Meldrum to its junction with Monroe Road, south on Monroe Road to its junction with Lanham, west on Lanham to its junction with Telephone Road, north on Telephone Road to its junction with Brisbane, west on Brisbane until it ends, then continuing due west on a line which would intersect Mykawa Road near its junction with Selinsky Road, south on Mykawa Road to its junction with Carson, and west on Carson to its junction with Martindale.

(6) From the point at which Horseshen Bayou crosses Bayarea Boulevard, northeast on Bayarea Boulevard to the point at which it begins to form the southeastern boundary of the city of Pasadena north and northwest along the western Pasadena city boundary to where it contacts the Houston City boundary, west along the southern boundary of Houston to where it crosses Horseshen Bayou, and southeast along the north bank of Horseshen Bayou to where it crosses Bayarea Boulevard.

In the May 26, 1977, FEDERAL REGISTER proposed rulemaking (42 FR 27009-27011) and associated May 27, 1977, press release, all interested parties were invited to submit factual reports or information which might contribute to the formulation of a final rulemaking.

All public comments received during the period May 26, 1977, to December 2, 1977, were considered.

## SUMMARY OF COMMENTS AND RECOMMENDATIONS

Comments were received from 26 individuals and organizations. Of these 16 were in favor of all or most parts of the proposal, seven were opposed to a

[4310-55]

Title 50—Wildlife and Fisheries

CHAPTER I—U.S. FISH AND WILDLIFE SERVICE,  
DEPARTMENT OF THE INTERIORPART 17—ENDANGERED AND THREATENED  
WILDLIFE AND PLANTSDetermination of Critical Habitat for the  
Houston ToadAGENCY: Fish and Wildlife Service,  
Interior.

ACTION: Final rule.

SUMMARY: The Service determines critical habitat for the Houston toad (*Bufo houstonensis*) in a portion of its range. This rule requires all Federal agencies to insure that actions authorized, funded, or carried out by them do not adversely affect this Critical Habitat. The areas determined as critical habitat are located in Bastrop and Burleson Counties, Tex.

DATE: This rule becomes effective on March 3, 1978.

FOR FURTHER INFORMATION CONTACT:

## RULES AND REGULATIONS

4023

or parts of the proposal, and three expressed no direct opinion on the proposal but added information relating to their specific organization or agency.

Congressman Bob Gammage (22nd District, Texas) expressed concern that, should the proposed Critical Habitat area remain unchanged, development in Harris County could be frozen. He also stated that he had been informed that the boundaries were scientifically unsubstantiated and that the lines for the boundaries were arbitrarily drawn. He suggested that public lands be evaluated, such as Clear Creek and Armand Bayou, since these areas would not be likely to be encroached on by private interests. This would be of great value to the orderly development of Harris County, according to Congressman Gammage. Finally, he felt a compromise could be reached that would allow development in Harris County and will prevent intrusion on the habitat of the Houston toad.

Ted L. Clark (Director, Wildlife Division, Texas Parks and Wildlife Department) concurred with six of the proposed areas, recommended the deletion of one, and expansion of the remaining two. Specific recommendations of that Department were:

A. The Department concurs with the Bastrop County area as defined in the proposed rules since Department personnel have observed this species there in moderate numbers in each of the last four years (1974-1977).

B. The Department also concurs with the area proposed as Critical Habitat in Burleson County since Dr. Robert A. Thomas, Texas A & M University, has found the Houston toad there in low numbers in each of the last four years (1974-1977).

C. The Department recommends that the northwest corner of Houston, Tex., be modified to include that portion of Addicks Reservoir southwest of the reservoir levee east of Longitude 96°59'23" and north of Latitude 29°50'35". Although Houston toads have not been reported from the Addicks Reservoir area, the habitat there is almost identical to that of the type locality a short distance away.

D. Harris County, six areas in South Houston and Pasadena. Based on the information furnished by Mr. William L. McClure, Texas Department of Highways and Public Transportation, in conjunction with our research and others, the Texas Parks and Wildlife Department recommends the following:

1. That the triangle between Harwin, Fonder and the Southwest Freeway be deleted since practically all of the land surface is covered with commercial, industrial, or residential development and is drained by underground storm sewers. Therefore, the area

cannot be considered Houston toad habitat.

2. That the area as defined in the proposed rules by junction of Hillcroft Avenue-South Main-Holmes Road-Knight Road-Alameda Road-West Orem Drive-South Post Oak-Sims Eayou-Hillcroft Avenue be designated as critical habitat. Although no recent Houston toad observations have been recorded for the area which has been approximately one-third developed, it does contain suitable habitat and the Houston toad might reasonably be expected to exist there.

3. That the area bounded by the Gulf Freeway, Shawnee Drive, Rodney, and Edgebrook Drive be considered as critical habitat since Houston toads were observed in this area in 1975 and 1976.

4. That the area bounded by Vista Road, Watters Road, Crenshaw Road, Young, Snodden Avenue, and Maple Road be designated as critical habitat since Houston toads were observed in this area in 1976.

5. That the area bounded by Carson, Martindale, Alameda-Genoa Road, Mykawa Road, Clear Creek, Telephone Road, Fuqua, Gulf Freeway, Meldrum, Monroe Road, Lanham, Telephone Road, Brisbane, Mykawa, and Carson Road be considered as critical habitat since historically, Houston toads have been previously recorded there in good numbers, though none have been recently observed.

6. That the area near Horsepen Bayou be expanded as follows: "Horsepen Bayou intersection with Bay Area Boulevard, northwest along the west bank of Armand Bayou to Genoa-Red Bluff Road, west along Genoa-Red Bluff Road to a projected extension of the easternmost north-south runway of Ellington Air Force Base, south along the extended line of such runway to its intersection with Horsepen Bayou, and easterly along the north bank of Horsepen Bayou to Bay Area Boulevard. This expansion would include additional suitable habitat in which the Houston toad was observed in good numbers in previous years, though none recently. The habitat where these observations were made has remained relatively unchanged, particularly on Ellington Air Force Base."

Finally, Mr. Clark stated that the Texas Parks and Wildlife Department will continue to monitor areas of known and potential Houston toad habitat in an effort to better delineate the distribution of this Endangered species.

Lauren E. Brown (Illinois State University) stated that he had reviewed all areas of critical habitat and could make no additional alterations. He reviewed his past interest in *B. houstonensis* (research and recommendations

for Endangered status in 1968) and indicated that all of Harris County is potentially critical habitat. He urged the Department of the Interior to resist at all costs any attempts by the City of Houston, the State of Texas, Harris County, or any other private or public special interest groups that pressure the Service to abandoning proposals for critical habitat in the Houston area.

Dr. Brown reiterated that little State, Federal, or local money had been spent on the species in spite of its very critically Endangered status. He states that this is in direct contrast with species such as the whooping crane and California condor. He points out that the Houston toad, with probably not more than 300 individuals in existence, has been repeatedly mentioned by various authors as a species which should have a high priority for protection and rehabilitation. Nevertheless, according to Dr. Brown, this species has been totally neglected. He states that the proposal of critical habitat represents a positive step forward if the Service would pay more attention to conserving this species. He concludes that the Houston toad has a high potential for being saved.

James M. Scott, Jr. (Houston, Tex.) suggested that the area called Sharpstown be deleted as critical habitat but that less developed areas in Harris County in sandy soil be considered. He further suggested some government-owned lands (Ellington Air Force Base, Hobby Airport, Clear Creek, Sims Bayou, Addicks Reservoir, Barker Reservoir, Texas state prison farm near Sugarland and Rosharon, and the 100-year flood plain areas of Oyster Creek and the Brazos River near Houston) be considered. He also recommended an area in Fort Bend County bounded by the Brazos River, Route 723 north of Rosenberg, Oyster Creek downstream past Sugarland, Dewitt to Julliff or the Brazoria County line be designated as critical habitat. He also stressed a critical habitat designation solely on biological grounds and that, although toads can't vote, we must protect such Endangered animals.

W. L. McClure (Houston, Tex.) recommended deletion of area D(1) and that the southern parts of areas D(2) and D(5) should also be deleted from any final rulemaking. Mr. McClure commented on development in Harris County and stated that government-owned areas, such as Ellington Air Force Base and Barker and Addicks Reservoir, should be preserved as a sanctuary for the Houston toad. He stated that land preserves and a captive breeding program are really the only ways to ensure the survival of the species in Harris County.

James Dixon (Texas A & M University) found the evaluation of habitat

In the proposal as adequate but recommended the deletion of the Sharpstown area. He also suggested including Ellington Air Force Base since the Houston toad and Atwater's prairie chicken are there. He recommended the purchase of the Burleson County area and highly recommended the other proposed sites, especially the Bastrop County site, be included in a final rulemaking.

The following individuals endorsed the proposal in its entirety, or with the deletion of the Sharpstown area. In addition, several individuals also requested that the Ellington Air Force Base be included in future considerations of critical habitat: Robert A. Thomas (Louisiana State University Medical Center), William A. Butler (Environmental Defense Fund), Eugene I. Majerowicz (Los Angeles, Calif.), D. Marrack (Bellair, Tex.), J. A. Rochelle (Francis and Francis, Dallas, Tex.), J. W. Akers (Sierra Club, Houston Regional Group), Raymond H. McDavid (Outdoor Nature Club of Houston), Morton Rich (Houston, Tex.), W. F. Blair (University of Texas at Austin), and Stanley McBee (Houston, Tex.).

R. L. Lewis (Chief Engineer of Highway Design, State Department of Highways and Public Transportation) listed a series of roads in Bastrop, Burleson, and Harris Counties which would probably be affected by the proposed Critical Habitat determination.

Mr. Lewis stated that it is doubtful the areas proposed as Critical Habitat by the Service will lead to ensuring the survival or recovery of the Houston toad because:

1. Within Critical Habitats, it appears that only those proposed actions with Federal involvement are covered; private actions are not. Very little of the proposed Critical Habitat is under Federal control.

2. The Critical Habitats proposed for Harris County in some cases are already developed urban areas; in others, they fall directly in the path of current urban growth. Even if the proposed Critical Habitats are adopted, the enormous growth pressures for industrial, commercial, and residential development in the rapidly growing Houston metropolitan area will most likely result in the alteration of such areas by privately financed ventures.

3. One reason for diminished Houston toad population is loss of habitat— which Critical Habitat determination may or may not deter. Another probably more significant factor is interspecies hybridization and competition with the Gulf Coast toad (*Bufo retilis*). This species apparently readily adjusts to the changing environment in the Houston area while the Houston toad does not. Accordingly, even if the proposed Critical Habitats could in some way preserve the status quo

within such areas, the drainage and other developmental alterations taking place in the areas surrounding the Critical Habitats would not limit this more dominant species—nor its competition and hybridization with whatever Houston toad populations might possibly be present in the Critical Habitat areas.

Accordingly, Mr. Lewis suggested as an alternative to include Addicks and Barker Flood Protection Reservoirs, Ellington Air Force Base, and Armand Bayou Park as areas which could be Critical Habitat. In view of the scarcity of the toad in Harris County, appropriate agencies should obtain specimens which could be established in those areas, according to Mr. Lewis.

L. Diane Schenke, representing Vinson and Elkins, Attorneys at Law, submitted three lengthy letters on behalf of clients of her firm. She objected to several of the areas in Harris County being included as Critical Habitat saying that: (1) The proposal is not biologically justified because of soil types; (2) the designation is arbitrary and capricious because the final report on a Houston toad study conducted by the Service had not been received at the time the proposal was published in the FEDERAL REGISTER; (3) the Houston toad has a tendency to hybridize in the areas of proposed Critical Habitat and that there are other more appropriate habitats available; and (4) the Service has not fulfilled the obligations of § 102(C) of the National Environmental Policy Act. In addition, comments were made on the degree of development in some areas, as in Sharpstown, which she stated would preclude the presence of the toad in that area.

All Ms. Schenke's letters contained comments on the general life history of *Bufo houstonensis*; most of her statements were based on papers published in the early 1970's. She also doubted the validity of *B. houstonensis* as a species because it was separated from other species only on morphological grounds. Each of her main points were elaborated on, and she included appropriate maps with each of her letters.

W. A. Sweitzer (Johnson-Loggins, Inc.) commented on only one of the six proposed areas in Harris County—the area D-2 of the proposal. Mr. Sweitzer reviewed development in this area and enclosed a report by W. L. McClure, a consultant, which indicated for the most part that conditions do not support biological reasons to classify this particular area as Critical Habitat. Mr. Sweitzer concluded that the Service should not include this area in a final rulemaking without specific biological study.

David S. Wolff (Wolff, Morgan and Company) commented on the proposed area in northwestern Harris

County. Mr. Wolff referred extensively to a 1975 report (Federal Aid Project No. W-103-16-5) which did not mention Houston toads in Harris County since 1967, and which stated that landowners had been contacted. Mr. Wolff mentioned that habitat modification is continuing to occur in the area in northwest Houston, and that there was little reason to suspect that *B. houstonensis* still exists in this area. Mr. Wolff questioned why private property should be designated Critical Habitat while 1,000 feet to the west, Addicks Reservoir, a 14,000 acre public property, should not be so designated. Mr. Wolff also stated that he had never been contacted by anyone about Houston toads.

Errol J. Donahue (Houston, Tex.) stated humans should not be displaced because of toads.

Colonel Luis P. Dominguez (Chief, Environmental Planning Division, U.S. Air Force) requested a threshold examination with regard to this species for areas on Ellington Air Force Base. Richard Brown (Office of Environmental Quality, Department of Housing and Urban Development) commented that the Regional Office in Dallas had several recently approved or pending applications for funding assistance, and that the applicants have been informed of the Critical Habitat proposal. Each project would have to be reviewed in light of circumstances existing at that time. John R. Hill, Jr. (Corps of Engineers, U.S. Army) submitted information on the biology of the Houston toad and listed a series of projects which might be affected by a Critical Habitat designation and suggests specific methods be developed to insure the preservation of Critical Habitat.

Finally, the week of October 17-21, 1977, a review team consisting of Fish and Wildlife Service personnel, consultants to the Service, and a representative of the Texas Parks and Wildlife Department met in Houston and reviewed all areas proposed as Critical Habitat in Bastrop, Burleson, and Harris Counties.

#### CONCLUSION

**Bastrop County.** The Service believes this is the best locality presently known for the Houston toad. The only problem with the FEDERAL REGISTER proposal for this site was the boundary around the town of Bastrop. The proposal reads " . . . west and north-west along the north bank of the Colorado River to the city limits of Bastrop, and north through Bastrop along Texas State Highway 95 . . . " This is hereby changed to " . . . west and northwest along the north bank of the Colorado River to the due southwest extension of Texas State Highway 95, and north along that extension and Texas State Highway 95 . . . " The

eraction line for soils in this area. The high ridge east of Bastrop. This boundary eliminates unsuitable portions and utilizes firmer landmarks in city limits, which are subject to change.

**Burleson County.** The one mile radius circle around Woodrow Lake includes all known Houston toad localities in Burleson County, the soil type (sand) conforms to the weak burrowing habitats suggested for this species, and both temporary and permanent ponds are found throughout the proposed area. The Service feels that one mile is a reasonable distance for dispersal from the center of activity.

After a thorough review and consideration of all comments and recommendations received, the Director has decided to proceed with a final rulemaking to list those areas in Bastrop and Burleson Counties as Critical Habitat for the Houston toad, with slight modifications which will provide a clearer more stable boundary around the town of Bastrop.

The Director further has determined that proposed areas D-1 and D-2 of Harris County do not contain habitat nor records of Houston toads and should no longer be considered as Critical Habitat for the species.

Finally, the Director has determined that there is insufficient data at present on which to base a Critical Habitat designation for those remaining areas in Harris County. Therefore, these areas will not be acted on in this final rulemaking. However, should future studies indicate that these areas are critical to the survival of the Houston toad, then a final determination of Critical Habitat can be made at the appropriate time.

#### EFFECT OF THE RULEMAKING

The effects of this determination are involved primarily with section 7 of the Act, which states:

"The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical."

An interpretation of the term "Critical Habitat" was published by the Fish

and Wildlife Service and the National Marine Fisheries Service in the *FEDERAL REGISTER* of April 23, 1975 (40 FR 17784-17785). Some of the major points of that interpretation are: (1) Critical Habitat could be the entire habitat of a species, or any portion thereof, if any constituent element is necessary to the normal needs or survival of that species; (2) actions by a Federal agency affecting critical habitat of a species would not conform with section 7 if such actions might be expected to result in a reduction in the numbers or distribution of that species of sufficient magnitude to place the species in further jeopardy, or restrict the potential and reasonable recovery of that species; and (3) there may be many kinds of actions which can be carried out within the Critical Habitat of a species which would not be expected to adversely affect that species.

Any Federal agency which feels its actions might affect the survival or the continued existence of this species should enter into consultation with the Director. Proposed provisions for interagency cooperation have been published in the January 23, 1977, *FEDERAL REGISTER* (42 FR 4068-4875) to assist Federal agencies in complying with section 7.

#### NATIONAL ENVIRONMENTAL POLICY ACT

An environmental assessment has been prepared in conjunction with this rulemaking. It is on file in the Service's Office of Endangered Species, 1612 K Street NW., Washington, D.C. 20240, and may be examined during regular business hours or obtained by mail. The assessment is the basis for a decision that the determinations of this rulemaking are not major Federal actions which would significantly affect the quality of the human environment within the meaning of section 102(2)(C) of the National Environmental Policy Act of 1969.

The primary author of this rulemaking is Dr. C. Kenneth Dodd, Jr., Office of Endangered Species, U.S. Fish and Wildlife Service 202-343-7814.

#### REGULATION PROMULGATION

Accordingly, 50 CFR 17.95(d) is amended by adding critical habitat of the Houston toad before that of the Florida Pine Barrens treefrog as follows:

§ 17.95 Critical Habitat—Fish and Wildlife.

- • • • •
- (d) Amphibians.
- • • • •

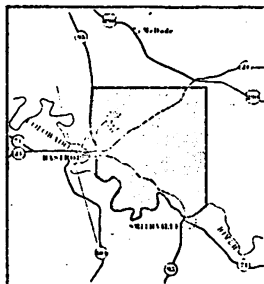
#### HOUSTON TOAD

(*Bufo houstonensis*)

Texas—Areas of land, water, and airspace as follows:

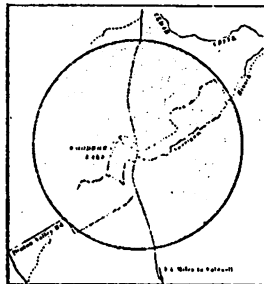
(1) **Bastrop County.** From the junction of a line corresponding to 30°12'00" N. and Texas State Highway 95 east along a line corresponding to 30°12'00" N. to where it intersects a line corresponding to 97°7'30" W. and south along a line corresponding to 97°7'30" W. to where it intersects the Colorado River, west and northwest along the north bank of the Colorado River to the due southward extension of Texas State Highway 95, and north along that extension and Texas State Highway 95 to where it intersects a line corresponding to 30°12'00" N.

HOUSTON TOAD  
Bastrop County, TEXAS



Critical Habitat for the Houston toad.

(2) **Burleson County.** A circular area with a 1-mile radius, the center being the north entrance to Lake Woodrow from Texas FM 2000.



## RULES AND REGULATIONS

critical Habitat for the Houston toad.

**NOTE.**—The Service has determined that this document does not contain a major action requiring preparation of an Economic Impact Statement under Executive Order 11917 and OMB Circular A-107.

Dated: January 18, 1978.

**KEITH M. SCHIRMER,**  
*Acting Director,*  
*Fish and Wildlife Service.*

(PR Doc. 78-2460 Filed 1-30-78; 8:45 am)

**Question:**

**What is the policy of the Service on the designation of critical habitat in an area where there is no evidence that the species presently exists?**

Criteria for the designation of critical habitat are given in the Interagency Cooperation Regulations published in the January 4, 1978 Federal Register (43 FR 870-867), a copy of which is attached. These criteria state that "the Director will consider the physiological behavioral, ecological and evolutionary requirements for the survival and recovery of listed species - - - are critical." Among the specific requirements mentioned is "space for individual and population growth and for normal recovery." For most species these criteria can be met by protection of the habitat where they presently occur. However, in some cases the range of a species has been so reduced, and its population has become so low that areas in addition to its present range must be proposed as critical habitat to insure room for population growth (recovery) and long-term survival. Normally, such additional areas are sites where the species once occurred and are still potentially recoverable habitat.

## 9. Everglade kite

**QUESTION:** On what basis did the Service designate 1100 [square] miles of Critical Habitat for the Everglade kites?

**ANSWER:** Only those wetlands in Florida that contained all the constituent elements essential to the survival or recovery of the Everglade kite were designated as Critical Habitats. Specifically, those areas supported substantial numbers of apple snails (*Pomacea paludosa*) upon which the kites depend as their sole source of food. The snails, in turn, are dependent on the maintenance of water levels in the marshes. The delineated areas have suitable water levels or have good potential for being managed for maximum snail production. Only the largest and best marshes were selected that are still used by kites or would be available for an expanded population of kites in the foreseeable future.

**QUESTION:** What is the difference between habitat and critical habitat in this [kite] instance and in general?

**ANSWER:** Extensive wetlands in Florida do not meet the requirements of the snails and, therefore, do not allow for kite usage. This bird eats only this one snail (in many thousands of hours of observation, only 2 or 3 other prey items have ever been seen to be taken by the kite). The snail requires certain definable water levels in the marshes. There could be some small areas in Florida that meet the full requirements of the kites but have not yet been identified, proposed, or finally determined to be critical to the kites' needs.

The Service uses the following definition and criteria, as published in the January 4, 1978, Federal Register, to determine what habitat is critical to a particular species:

"Critical habitat" means any air, land, or water area (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species) and constituent elements thereof, the loss of which would appreciably decrease the likelihood of the survival and recovery of a listed species or a distinct segment of its population. The constituent elements of Critical Habitat include, but are not limited to: physical structures and topography, biota, climate, human activity and the quality and chemical content of land, water, and air. Critical Habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion.



“402.05 Determination of Critical Habitat

(a) Procedure. Whenever deemed necessary and appropriate, the Director shall determine Critical Habitat for a listed species. After exchange of biological information, as appropriate, with the affected States and Federal agencies with jurisdiction over the lands or waters under consideration, the Director shall publish proposed and final rulemakings, accompanied by maps and/or geographical description in the Federal Register. Comments of the scientific community and other interested persons will also be considered in promulgating final rulemakings. The modification or revocation of a Critical Habitat determination shall also require the publication in the Federal Register of a proposed and final rulemaking with an opportunity for public comment.

(b) Criteria. The Director will consider the physiological, behavioral, ecological, and evolutionary requirements for the survival and recovery of listed species in determining what areas or parts of habitat (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of the species) are critical. These requirements include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing of offspring; and generally,
- (5) Habitats that are protected from disturbances or are a representative of the geographical distribution of listed species.

Habitats that do not meet these criteria and definitions are not determined by the Service to be critical to a listed species.”

QUESTION: Did you conduct a public hearing on the proposed Critical Habitat designation [of the kite]?

ANSWER: No, because none was requested by any agency or individual. Several other public hearings have been held for other critical habitat proposals, but none were requested in the case of the kite. From past experience, the Service finds that the bulk of the public comments at hearings (or in letters about proposals) are based on factors which do not meet the criteria set forth above. The Service makes a determination of Critical Habitat based upon those technical criteria and not non-biological factors (pro or con) submitted on a proposal.

QUESTION: What comments did you receive from the State of Florida on the Critical Habitat designation?

ANSWER: Attached is a copy of the letter from the State of Florida supporting the proposal. A registered letter was sent to the Governor, plus a copy to the Florida Game and Fresh Water Fish Commission, in accordance with Section 4 of the Act.

## FLORIDA GAME AND FRESH WATER FISH COMMISSION

RANDOLPH R. THOMAS, Chairman  
Jacksonville

E. P. "SONNY" BURNETT, Vice Chairman  
Tampa

HOWARD ODOM  
Marianna

DONALD G. RHODES D.D.S.  
Satellite Beach

GEORGE G. MATTHEWS  
Palm Beach

DR. O. E. FRYE, JR., Director  
H. E. WALLACE, Deputy Director  
R. M. BRANTLY, Deputy Director



FARRIS BRYANT BUILDING  
620 South Meridian Street  
Tallahassee, Florida 32304

January 17, 1977

Mr. Lynn A. Greenwalt  
Director  
U. S. Fish and Wildlife  
Service  
U. S. Department of the  
Interior  
Washington, D. C. 20240

Re: FWS/OES --/P31/N14

Dear Mr. Greenwalt:

We concur with the recommendations of the Director of Region Four of the Fish and Wildlife Service which delineate the critical habitat for the Florida Everglade kite (Rostrhamus sociabilis plumbeus), and the dusky seaside sparrow (Ammodramus maritima nigrescens). The two birds are restricted to the State of Florida.

Sincerely,

O. E. Frye, Jr.  
Director

OEF/FWS/vg  
cc: Governor Reubin O'D. Askew

RECEIVED  
U. S. FISH AND WILDLIFE SERVICE  
DIVISION OF LAW ENFORCEMENT  
77 FEB -7 4:11:48  
SEARCHED  
INDEXED  
FILED

Additional questions not in transcript

#### 9. Everglades Kite

-On what basis did the Service reject the application of Florida Power and Light to cross the Loxahatchee Wildlife Refuge?

The proposed route would have crossed one of the few fee title tracts of land in the refuge and was not considered compatible with the wildlife objectives of the refuge, a requirement necessary to be met under the National Wildlife Refuge Administration Act. In addition, the right-of-way was denied because the area to be crossed was potentially habitat for management and recovery of the Everglade kite. This area was also under consideration for a Critical Habitat determination. Also it is known that kites are intolerant of tall objects on the horizon of their habitat. The Florida Power and Light Company would not consider an underground line.

-What evidence do you have that the proposed transmission line site contained kites?

This unit of the Loxahatchee Refuge was acquired by the Service with the intention of future development and management as kite habitat. The existence of kites at the site is irrelevant to the issue. The area possesses all of the attributes necessary for development as suitable kite habitat. Planning is underway, and development and management of this unit in connection with already developed adjacent units will provide approximately 2,500 acres of prime kite habitat. As a result, over a period of years, the number of kites using the refuge could possibly double. This would substantially reduce the threat to the survival of this species.

-Why did the Service reject the proposal of the Florida Power and Light to purchase additional land and provide \$1 million for the development of the site?

Land exchange was not acceptable as the lands offered were not contiguous and were unsuitable for management as a unit of this refuge.

SPECIES AND CRITICAL HABITATS THAT MAY BE ADDED TO U.S.  
LIST DURING REMAINDER OF CALENDAR 1978

| <u>SPECIES</u>                                 | <u>ADD TO LIST</u> | <u>ADD CRITICAL HABITAT</u> | <u>STATES</u>  |
|--|--------------------|-----------------------------|----------------|
| Virginia big-eared bat                         | X                  | X                           | OH, VA, WV, KY |
| Ozark big-eared bat                            | X                  | X                           | MO, AR, OK     |
| Light-footed clapper rail                      | -                  | X                           | CA             |
| California least tern                          | -                  | X                           | CA             |
| American peregrine falcon<br>(Rocky Mountains) | -                  | X                           | CO, NM, UT, WY |
| Yellow-shouldered blackbird                    | -                  | X                           | PR             |
| Aleutian canada goose                          | -                  | X                           | CA             |
| Laysan duck                                    | -                  | X                           | HI             |
| Puerto Rican whip-poor-will                    | -                  | X                           | PR             |
| Santa Cruz long-toed salamander                | -                  | X                           | CA             |
| Valdina Farms salamander                       | -                  | X                           | TX             |
| New Mexican ridge-nosed rattlesnake            | X                  | X                           | NM             |
| Leatherback sea turtle                         | -                  | X                           | Virgin Islands |
| Hawksbill sea turtle                           | -                  | X                           | PR             |
| Plymouth red-bellied turtle                    | X                  | X                           | MA             |
| Illinois mud turtle                            | X                  | X                           | IA, IL         |



3

|  |   |   |            |
|--|---|---|------------|
| Birdwing pearly mussel                 | - | X | TN         |
| Cumberland monkeyface<br>pearly mussel | - | X | TN         |
| Athearn's river snails                 | X | - | TN         |
| Pleurocera river snails                | X | - | TN, KY, AL |
| Slug snail                             | X | - | CA         |
| Reeves County snail                    | X | - | TX         |
| Muddy Valley turban snail              | X | - | NV         |
| Ash Meadows turban snail               | X | - | NV         |
| Pahranagat Valley turban snail         | X | - | NV         |
| Banded dune snail                      | X | - | CA         |
| Fraternal snail                        | X | - | CA         |
| Rocky coast snail                      | X | - | CA         |
| Bristle snail                          | X | - | CA         |
| Cheatum's snail                        | X | - | TX         |
| White River snail                      | X | - | NV         |
| Karok Indian snail                     | X | - | CA         |
| Lotis blue butterfly                   | - | X | CA         |
| Lange's metalmark butterfly            | - | X | CA         |

|                                  |   |   |                                 |
|----------------------------------|---|---|---------------------------------|
| Mission blue butterfly           | - | X | CA                              |
| San Bruno elfin butterfly        | - | X | CA                              |
| Smith's blue butterfly           | - | X | CA                              |
| El Segundo blue butterfly        | - | X | CA                              |
| Oregon silverspot butterfly      | X | X | OR, WA                          |
| Great basin silverspot butterfly | X | X | CO, VT                          |
| Blue-black silverspot butterfly  | X | X | AR, NM                          |
| Callippe silverspot butterfly    | X | X | CA                              |
| Palos Verdes blue butterfly      | X | - | CA                              |
| San Francisco tree lupine moth   | X | X | CA                              |
| Kern primrose sphinx moth        | X | - | CA                              |
| Dakota skipper butterfly         | X | X | MN, ND, SD                      |
| Montane Pawnee skipper butterfly | X | X | CO                              |
| Karner blue butterfly            | X | X | NY, IL, MI, MN, IND, MA, NH, WI |
| Beller ground beetle             | X | X | WA                              |
| Globose dune beetle              | X | X | CA                              |
| San Joaquin dune beetle          | X | X | CA                              |
| Sacramento anthicid beetle       | X | X | CA                              |
| Delta green ground beetle        | X | X | CA                              |

S

|                                       |   |   |        |
|---------------------------------------|---|---|--------|
| Mojave rabbitbrush longhorn beetle    | X | X | CA     |
| California elderberry longhorn beetle | X | X | CA     |
| Robinson's rain scarab beetle         | X | X | CA     |
| Andrew's dune scarab beetle           | X | X | CA     |
| Giuliani's dune scarab beetle         | X | X | NV     |
| Big South Fork crayfish               | X | - | KY, TN |
| Chickamauga crayfish                  | X | - | GA, TN |
| Obey crayfish                         | X | - | TN     |
| Louisville crayfish                   | X | - | MO     |
| Nashville crayfish                    | X | - | TN     |
| Placid crayfish                       | X | - | CA     |
| Palm Springs cave crayfish            | X | - | FL     |
| Madison cave isopod                   | X | - | VA     |
| Valdina farms isopod                  | X | X | TX     |
| Hay's Spring amphipod                 | X | - | DC     |
| Kauai cave amphipod                   | X | X | HI     |
| Alabama cave shrimp                   | X | - | AL     |
| Kentucky cave shrimp                  | X | - | KY     |



6

|                              |   |            |
|------------------------------|---|------------|
| Squirrel chimney cave shrimp | X | FL         |
| California freshwater shrimp | X | CA         |
| Ozark cavefish               | X | AR, MO, OK |
| Neosho madtom                | X | KS, MO, OK |
| Cui-ui                       | - | NV         |
| Kauai cave wolf spider       | X | HI         |

7

|  |   |   |    |
|--|---|---|----|
| Carter's panic-grass                     | X | - | HI |
| Cooke kokio (a tree-cotton)              | X | - | HI |
| Hau-hele'ula (a tree-cotton)             | X | - | HI |
| Kauai kokio (a tree-cotton)              | X | - | HI |
| Kauai hibiscadelphus (a tree-mallow)     | X | - | HI |
| Kilauea hau kuahiwi (a tree-mallow)      | X | - | HI |
| Hualalai hau kuahiwi (a tree-mallow)     | X | - | HI |
| Contra Costa wallflower                  | - | X | CA |
| Antioch Dunes evening-primrose           | - | X | CA |
| McDonald's rock cress                    | X | X | CA |
| San Diego Pogogyne                       | X | - | CA |
| Crampton's Orcutt grass                  | X | X | CA |
| Salt marsh bird's-beak                   | X | - | CA |
| <u>Phacelia argillacea</u> (a waterleaf) | X | X | UT |
| Raven manzanita                          | X | X | CA |
| Tiburon mariposa                         | X | X | CA |
| Presidio clarkia                         | X | X | CA |

|  |   |   |                        |
|--|---|---|------------------------|
| San Francisco allocarya                | X | - | CA                     |
| Tiburon jewelflower                    | X | X | CA                     |
| <i>Tiburon buckwheat</i>               | X | - | CA                     |
| Ash Meadows stickleaf                  | X | X | NV                     |
| Ash Meadows milk-vetch                 | X | X | NV                     |
| Amargosa niterwort                     | X | X | CA                     |
| <u>Sclerocactus glaucus</u> (a cactus) | X | - | CO, VT                 |
| Spineless hedgehog cactus              | X | - | CO                     |
| Mead's milkweed                        | X | - | IL, IN, IA, KS, MO, WI |
| Dinosaur milk-vetch                    | X | - | UT                     |
| Large-fruit bladderpod                 | X | X | WYO                    |
| Laramie false sagebrush                | X | X | WYO                    |
| Bunched Arrowhead                      | X | - | NC, SC                 |
| Florida torreyia                       | X | - | FL, GA                 |
| Malheur wire - lettuce                 | X | X | OR                     |
| San Benito evening - primrose          | X | X | CA                     |
| Stebbins lewisia                       | X | X | CA                     |
| Mountain golden heather                | X | X | NC                     |
| Chapmans rhododendron                  | X | - | FLA                    |
| Harper's beauty                        | X | - | FLA                    |

p. 64

**Question:** A general outline or description of the habitats that would indicate the things that would be precluded in the various habitats.

**Answer:** A determination of Critical Habitat as provided by the Interagency Cooperation Regulations (Section 7) considers the physiological, behavioral, ecological, and evolutionary requirements for the survival and recovery of Endangered or Threatened species and would not operate as a bar to Federal actions (Section 402.05 b). Section 7 of the Act requires all Federal agencies to insure that their actions, after consultation with DOI, do not adversely impact on a listed species or its Critical Habitat. The Interagency Cooperation Regulations (Section 7) provide a mechanism whereby the various agencies may realize their obligations under Section 7 and obtain, through consultation with the FWS, a biological opinion regarding the effect of the Federal action on listed species or their habitats. Should the biological opinion conclude that the Federal action as presented is likely to result in the destruction or adverse modification of Critical Habitat, it is the responsibility of the Federal agency to determine whether to proceed with the activity or program as planned in light of its Section 7 obligations (Section 402.04 g). The action could be modified so that it would not cause harm to the Critical Habitat and the biological opinion may include recommendations for modifications in the identified activity or program which would enhance the conservation and protection of Critical Habitat of listed species (Section 402.04.e.4.). Each Federal action's proposed impact on the Critical Habitat is evaluated independently and the characteristics of the Critical Habitat do not, in and of themselves, preclude any action.

## CRITICAL HABITAT FINALIZED, MAPS, AND DESCRIPTIONS

| SPECIES                              | DATE OF<br>FEDERAL REGISTER | EST. TOTAL<br>ACRES (10 <sup>3</sup> ) | NO. OF<br>AREAS | NOTES | MAP<br>INDEX<br>LOC. |
|--------------------------------------|-----------------------------|--|-----------------|-------|----------------------|
| Snail darter (No Map Available)      | 04/01/76                    | 1.3                                    | 1               |       | 1                    |
| Florida manatee (No Map Available)   | 09/24/78                    | 950                                    | 16              | 1     | 2,4,10               |
| Indian bat (No Map Available)        | 09/24/76                    | N/A                                    | 13              | 2     | 3,1                  |
| American crocodile                   | 09/24/76                    | 960                                    | 1               |       | 4                    |
| California condor (No Map Available) | 09/24/76                    | 556                                    | 9               |       | 5,13                 |
| Yellow-shouldered blackbird          | 11/19/76                    | 22                                     | 1               | 3     | 6                    |
| St. Croix lizard                     | 06/03/77                    | .015                                   | 1               |       | 6                    |
| Giant anole                          | 07/21/77                    | 1.6                                    | 1               |       | 6                    |
| Mississippi sandhill crane           | 08/08/77                    | 25                                     | 3               |       | 7                    |
| Everglade Kite                       | 08/11/77                    | 963                                    | 9               |       | 8                    |
| American Peregrine falcon            | 08/11/77                    | 12                                     | 5               |       | 9                    |
| Cape Sable seaside sparrow           | 08/11/77                    | 271                                    | 4               |       | 4                    |
| Dusky seaside sparrow                | 08/11/77                    | 90                                     | 2               |       | 10                   |
| Norro Bay kangaroo rat               | 08/11/77                    | 0.8                                    | 1               |       | 11                   |
| Palila                               | 08/11/77                    | 77                                     | 1               |       | 12                   |
| Alabama cavefish (No Map Available)  | 09/09/77                    | N/A                                    | 1               | 2     | 13                   |
| Slackwater darter                    | 09/09/77                    | 20                                     | 2               |       | 13                   |
| Slender chub                         | 09/09/77                    | 22                                     | 2               |       | 14                   |
| Spotfin chub                         | 09/09/77                    | 186                                    | 3               |       | 1                    |
| Yellowfin madtom                     | 09/09/77                    | 30                                     | 2               |       | 14                   |
| Florida Pine Barrens treefrog        | 11/11/77                    | 1.1                                    | 6               |       | 15                   |
| Golden coqui                         | 11/11/77                    | 7.5                                    | 3               |       | 6                    |
| Leopard darter                       | 01/27/78                    | 8.0                                    | 3               | 4     | 16                   |
| Houston toad                         | 01/31/78                    | 83                                     | 2               |       | 17                   |
| Mona boa                             | 02/03/78                    | 22                                     | 1               | 3     | 6                    |
| Mona ground iguana                   | 02/03/78                    | 22                                     | 1               | 3     | 6                    |
| Gray wolf                            | 03/09/78                    | 4,600                                  | 4               | 3     | 18                   |
| Little Kern golden trout             | 04/13/78                    | 36                                     | 1               |       | 19                   |
| Whooping crane                       | 05/15/78                    | 365                                    | 9               |       | 20                   |
|                                      | Total                       | 9,352                                  | 108             |       |                      |

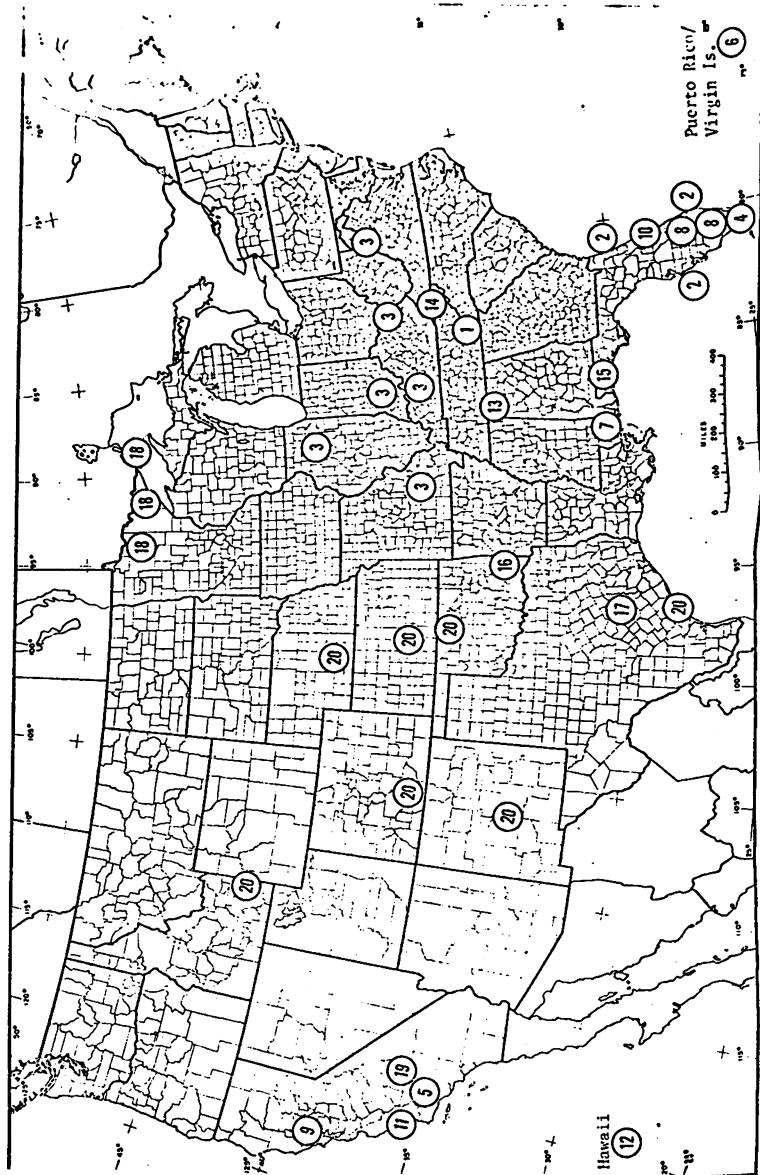
NOTES: 1. Estimate subject to 30 percent error, either direction

2. Caves, no estimate made of area

3. (Mona Island, P.R.) all three species have same Critical Habitat

4. Actual Critical Habitat is described as River or stream course, no actual area stated  
(Estimated River miles converted to acres)

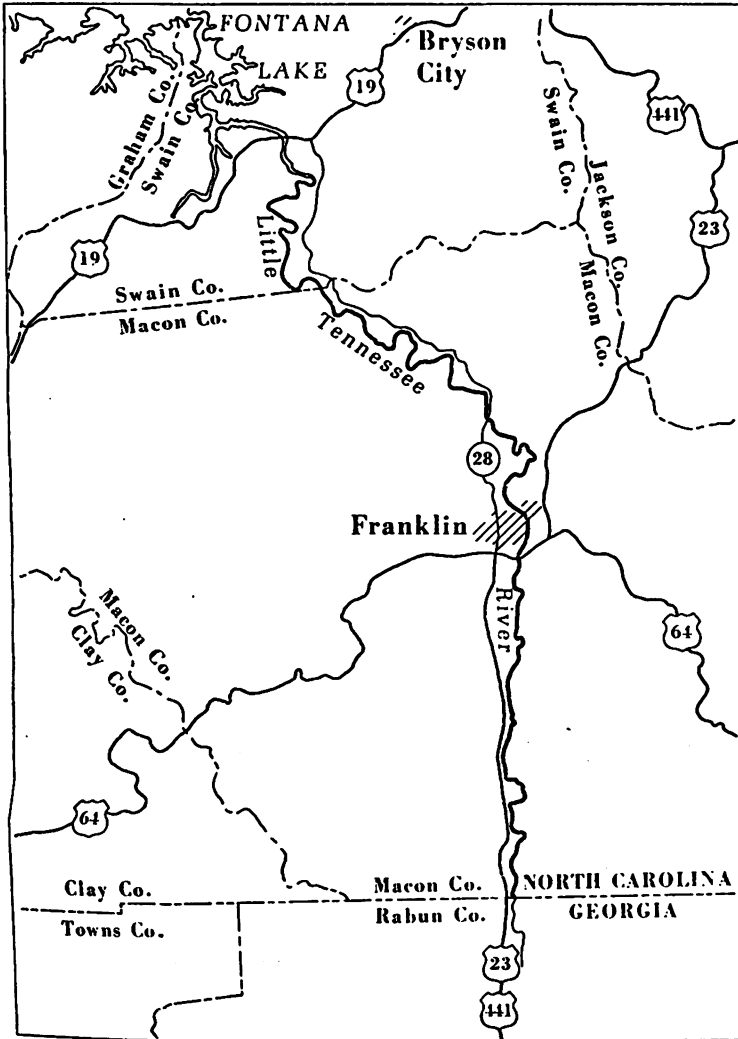
7/1/78



## SPOTFIN CHUB

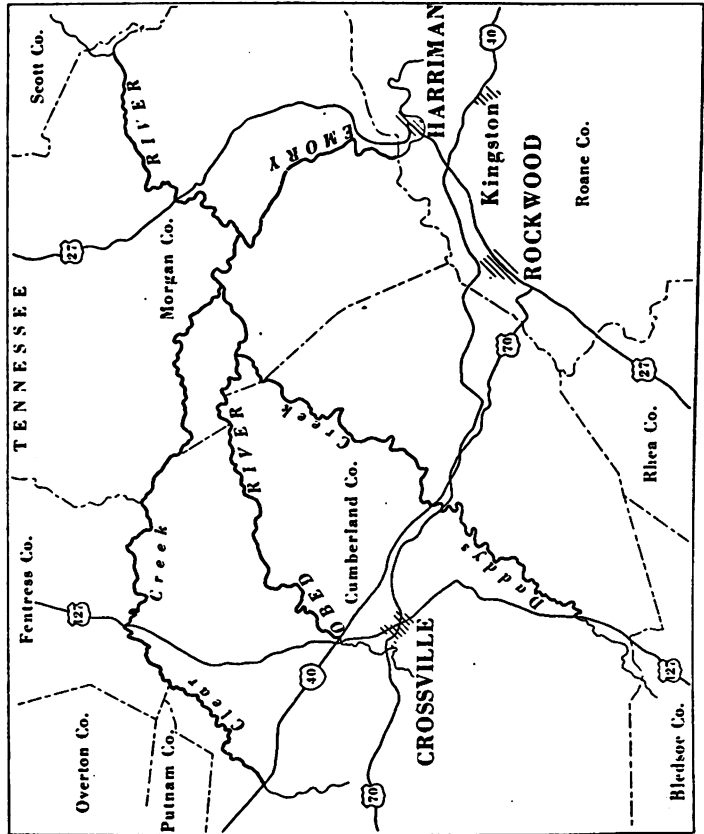
①

Macon and Swain Counties, NORTH CAROLINA



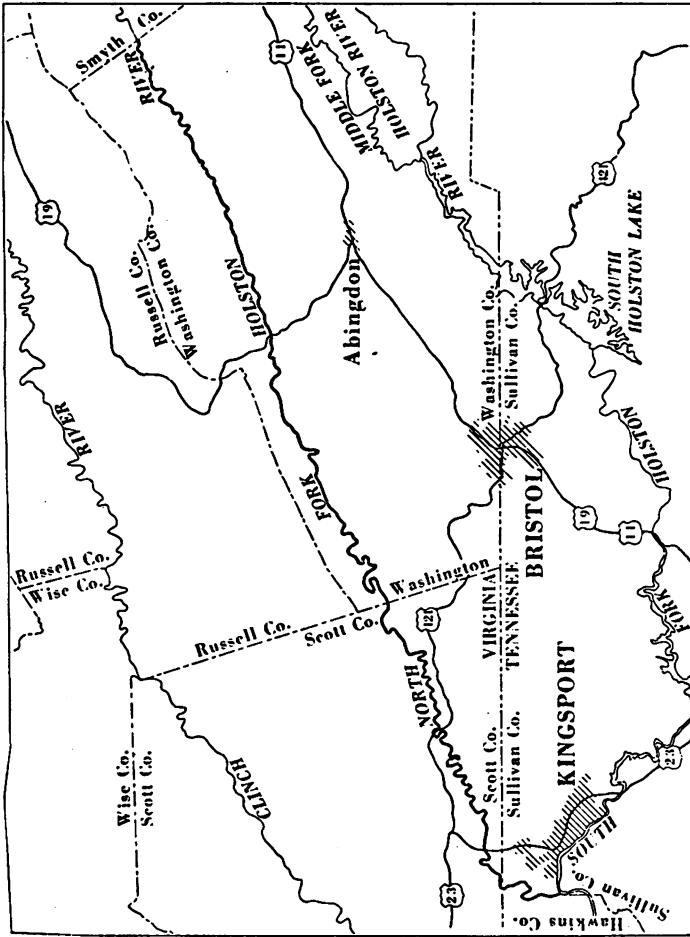
## SPOTFIN CHUB

Cumberland, Fentress and Morgan Counties, TENNESSEE



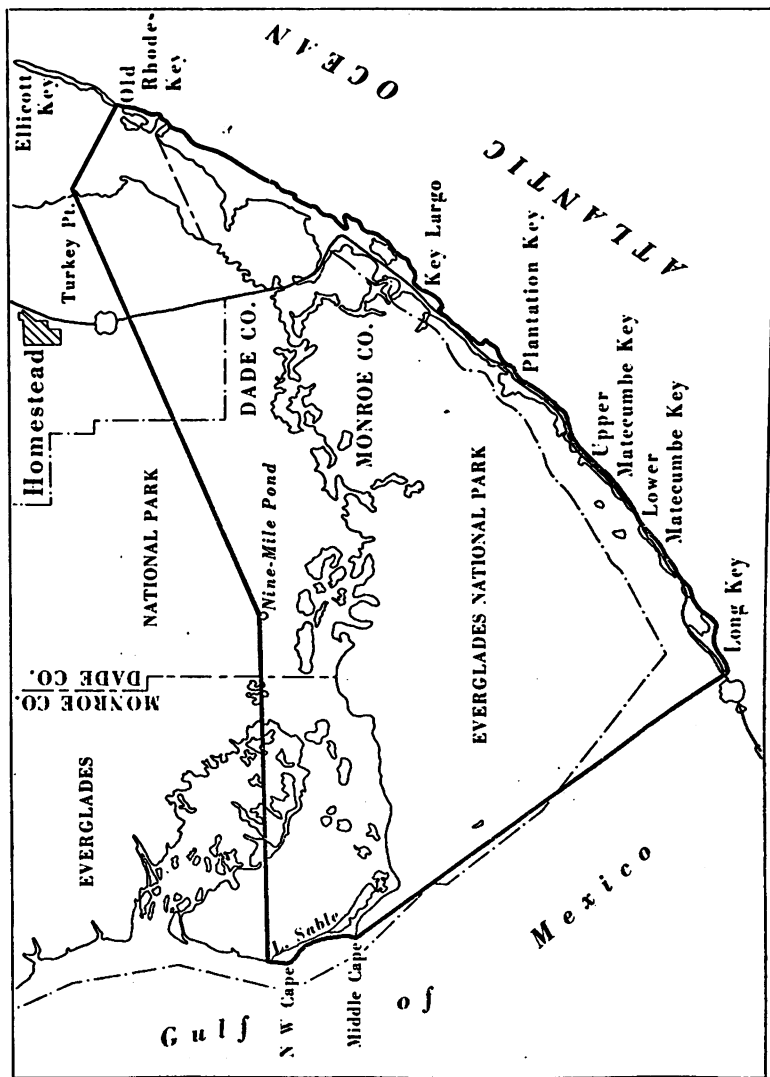


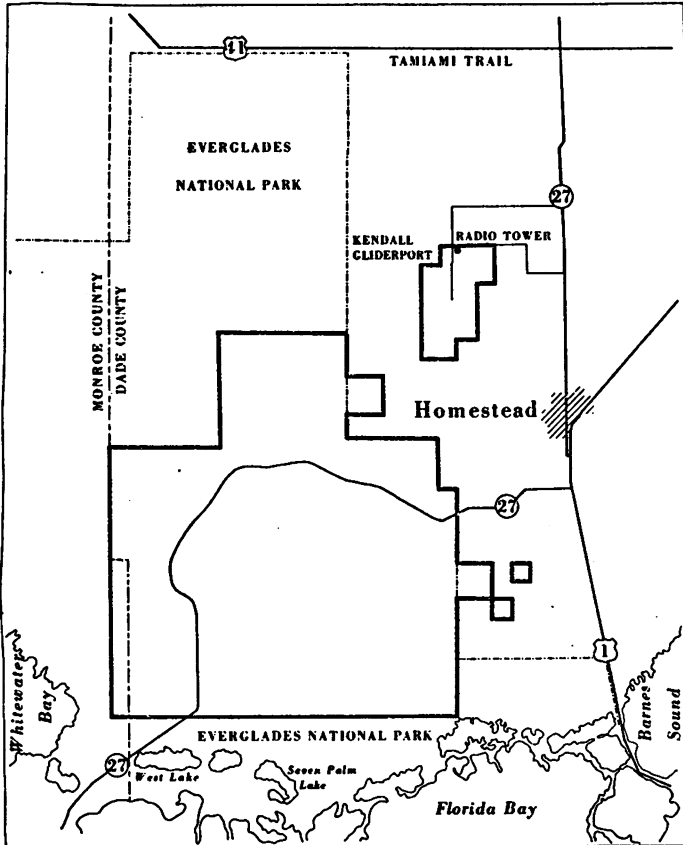
SPOTFIN CHUB  
TENNESSEE and VIRGINIA



# AMERICAN CROCODILE

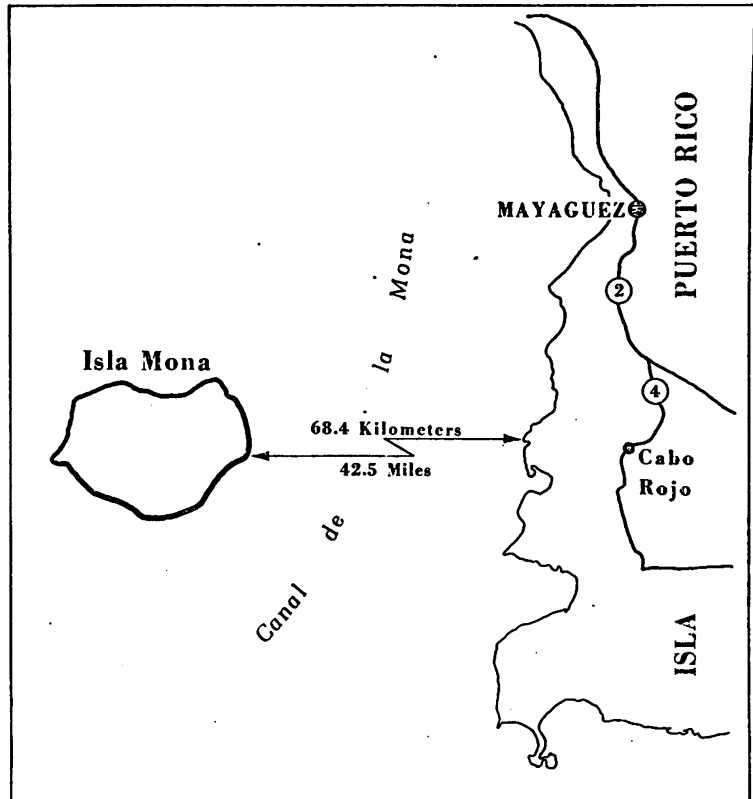
Dade and Monroe Counties, Florida



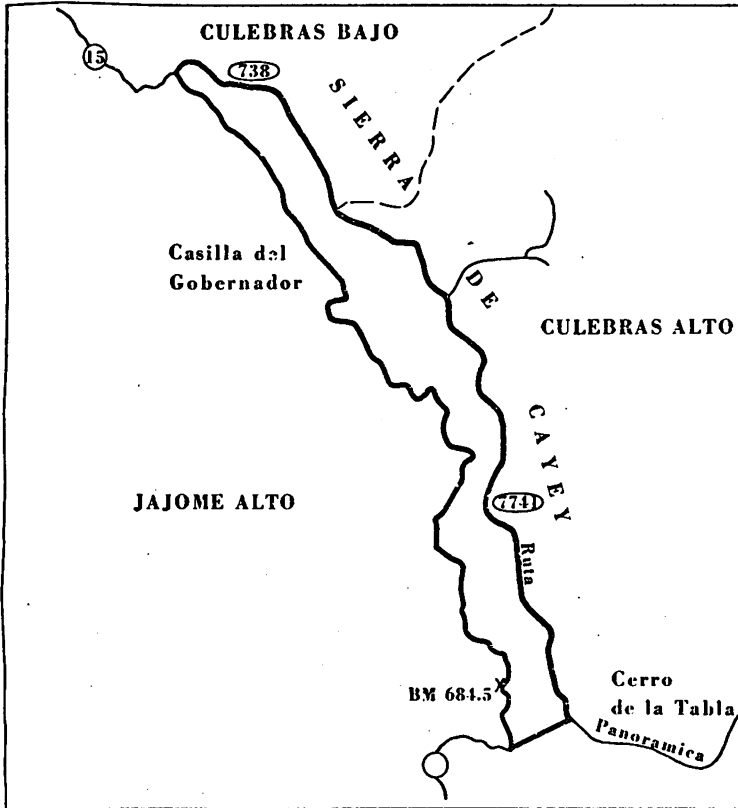
**CAPE SABLE SPARROW****Dade and Monroe Counties, FLORIDA**

## MONA ISLAND

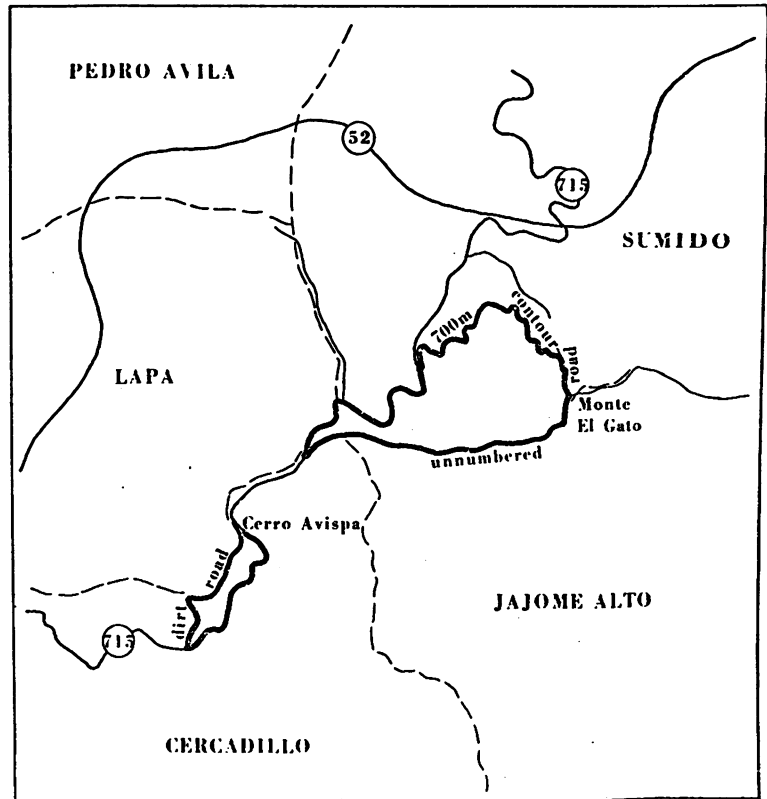
PUERTO RICO



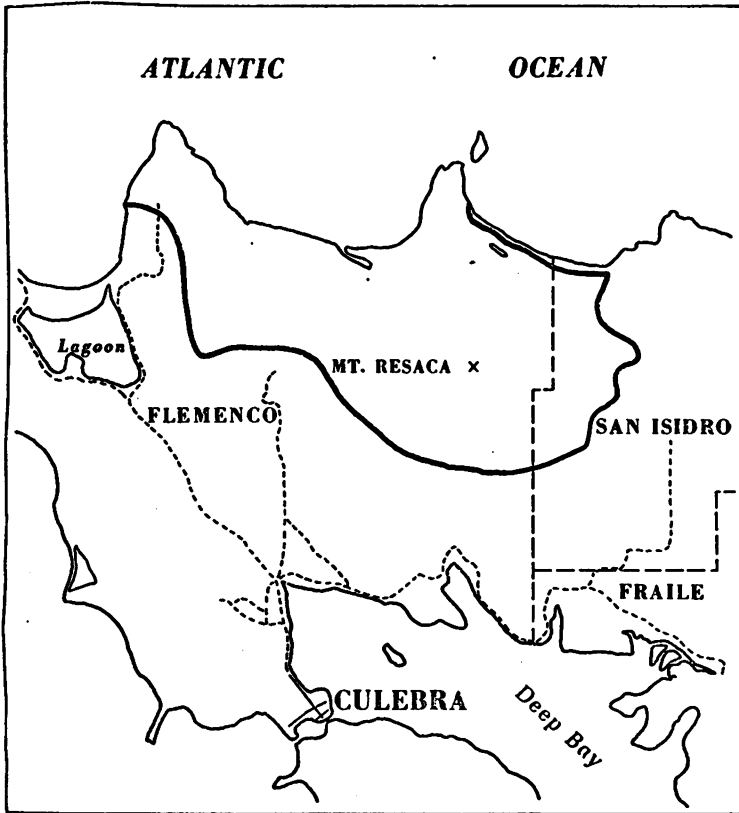
GOLDEN COQUI  
PUERTO RICO



GOLDEN COQUI  
PUERTO RICO

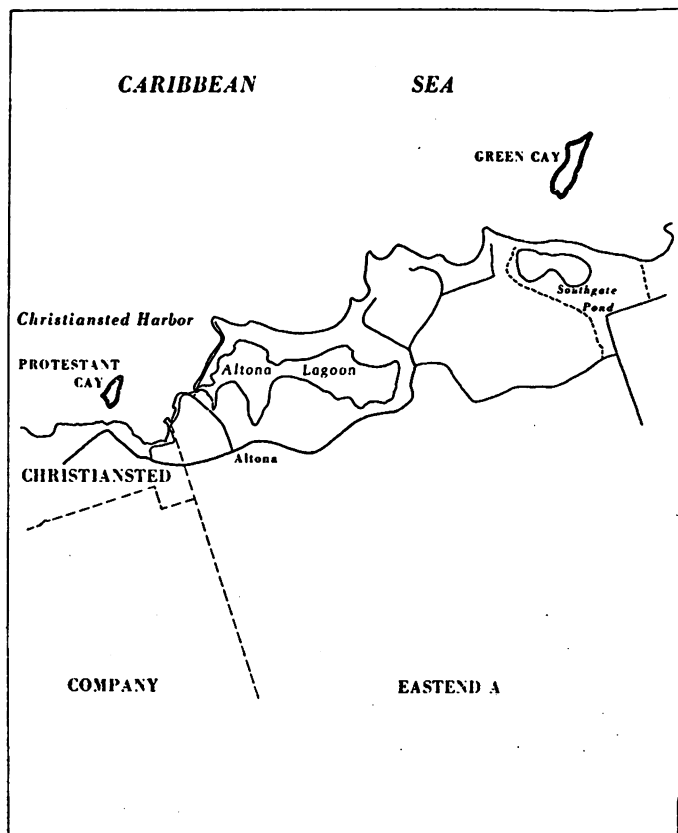


GIANT ANOLE  
PUERTO RICO



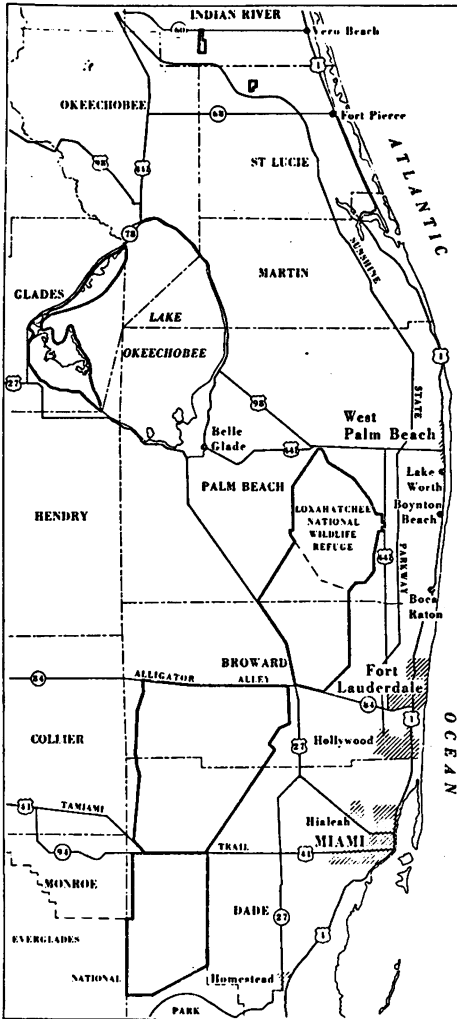
## ST. CROIX GROUND LIZARD

U.S. VIRGIN ISLANDS



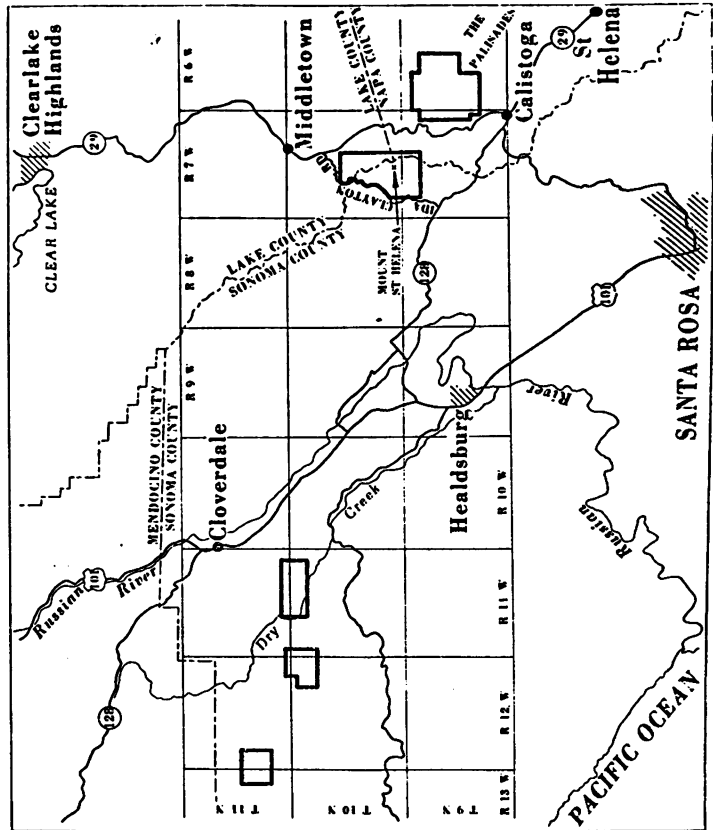


FLORIDA EVERGLADE KITE  
FLORIDA



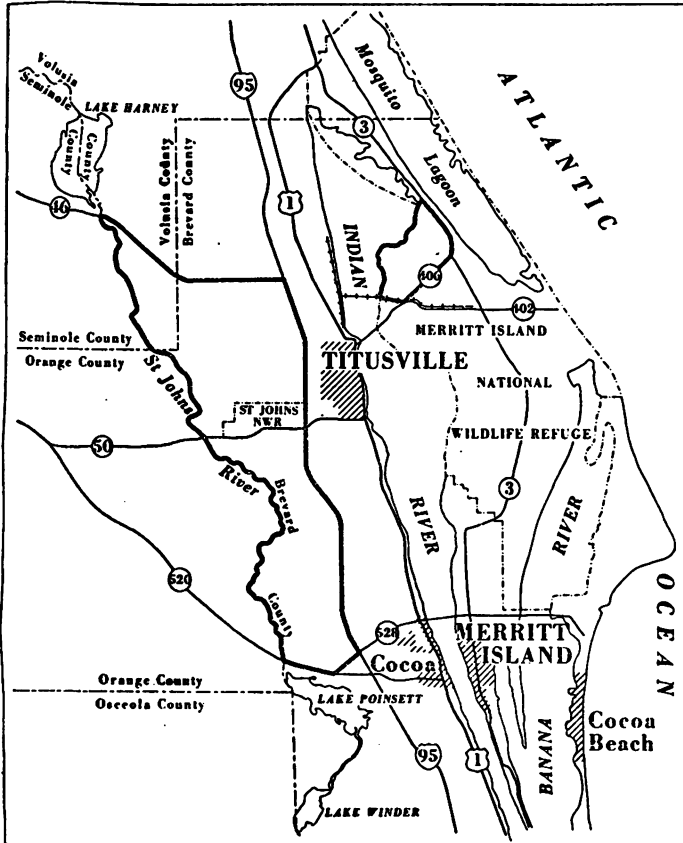
# AMERICAN PEREGRINE FALCON

Lake, Napa and Sonoma Counties, CALIFORNIA



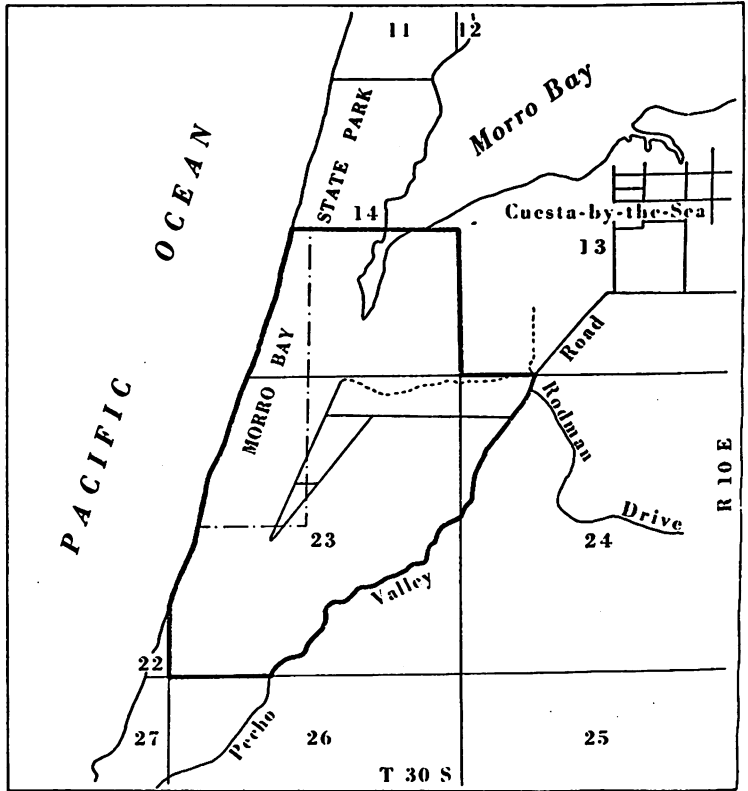
## DUSKY SEASIDE SPARROW

Brevard County, FLORIDA



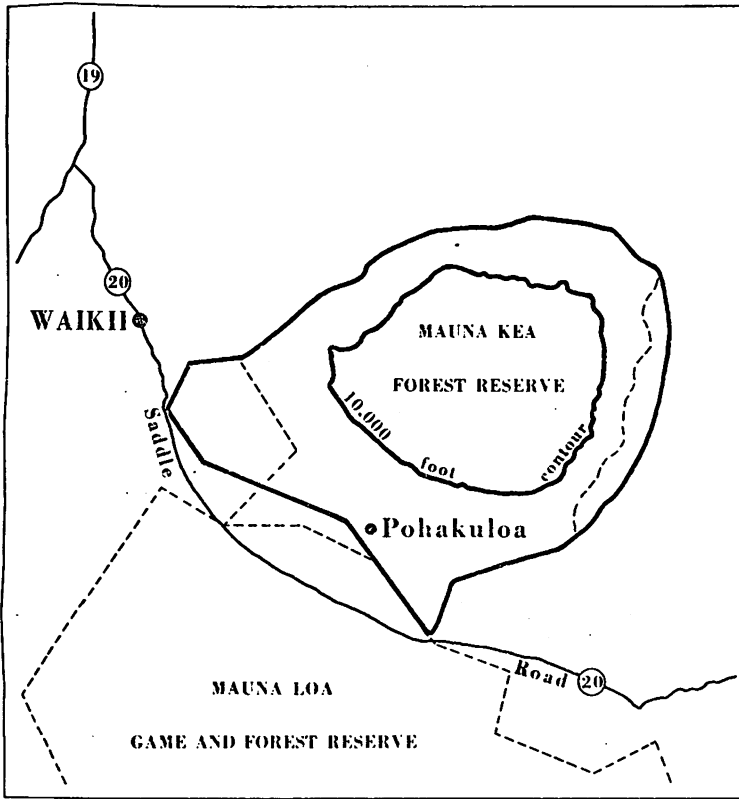
## MORRO BAY KANGAROO RAT

San Luis Obispo County, CALIFORNIA



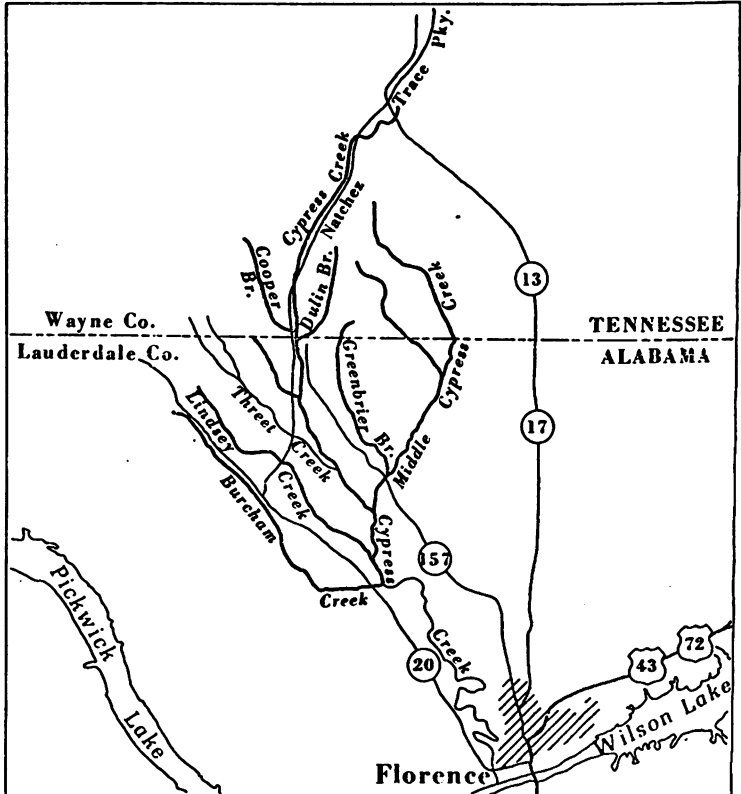
## PALILA

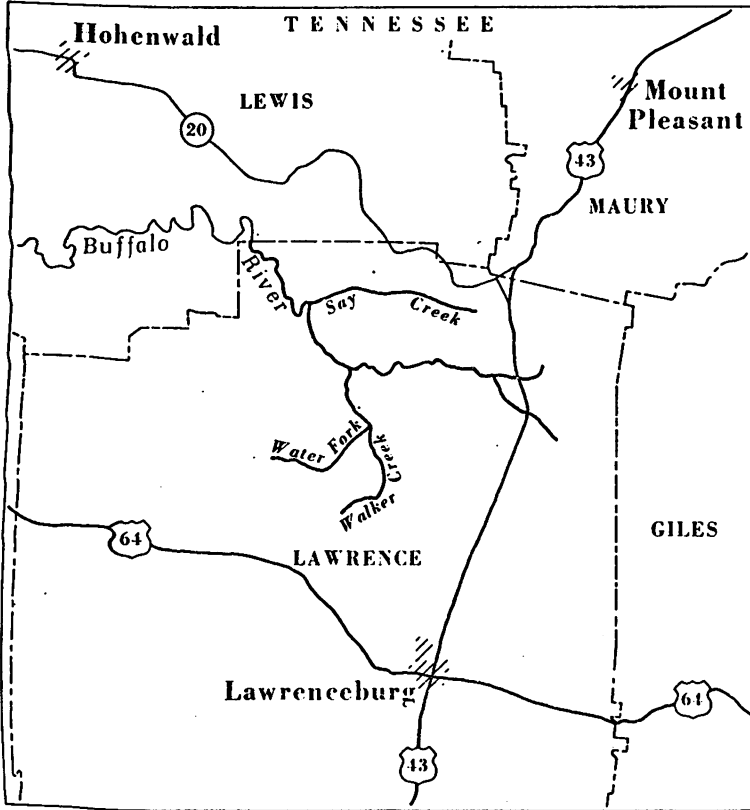
Hawaii County, HAWAII



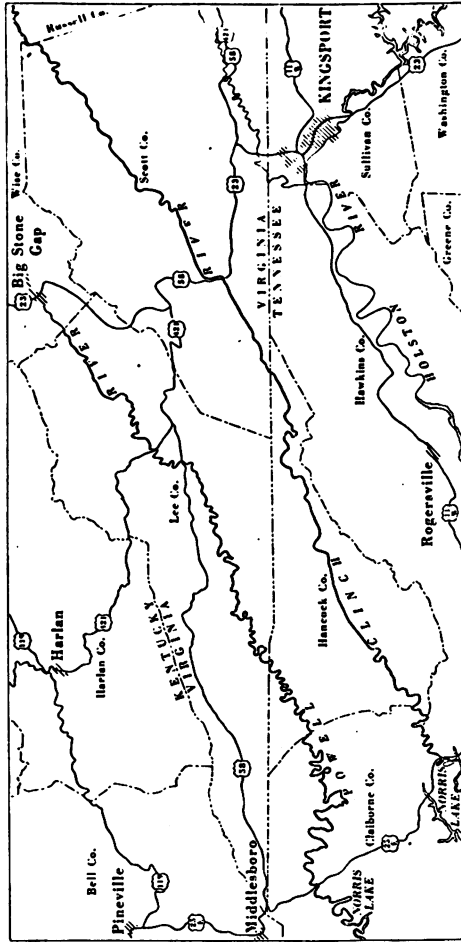
## SLACKWATER DARTER

Lauderdale Co., ALABAMA and Wayne Co., TENNESSEE



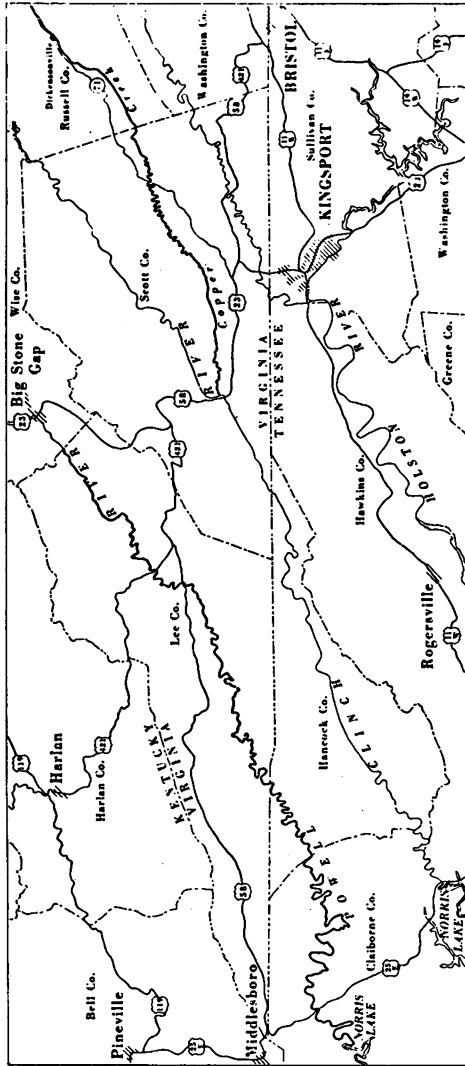
**SLACKWATER DARTER****Lawrence County, TENNESSEE**

**SLENDER CHUB**  
**TENNESSEE and VIRGINIA**





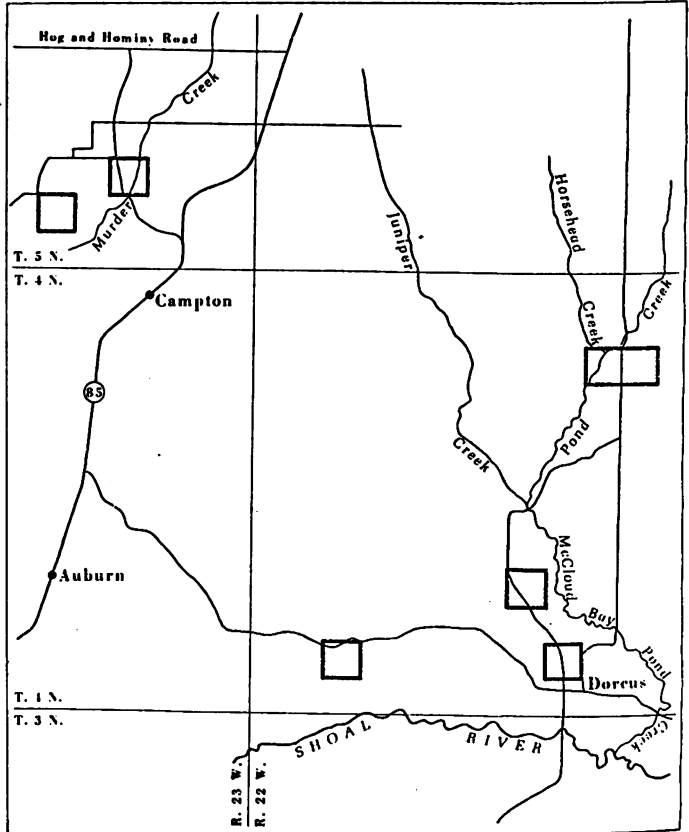
**YELLOWFIN MADTOM**  
**TENNESSEE and VIRGINIA**



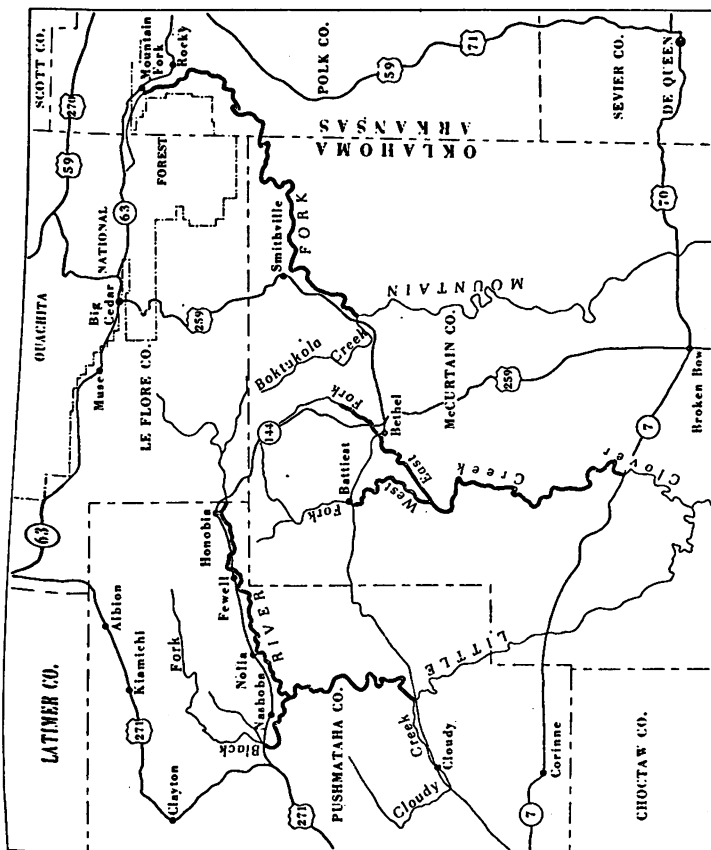
14

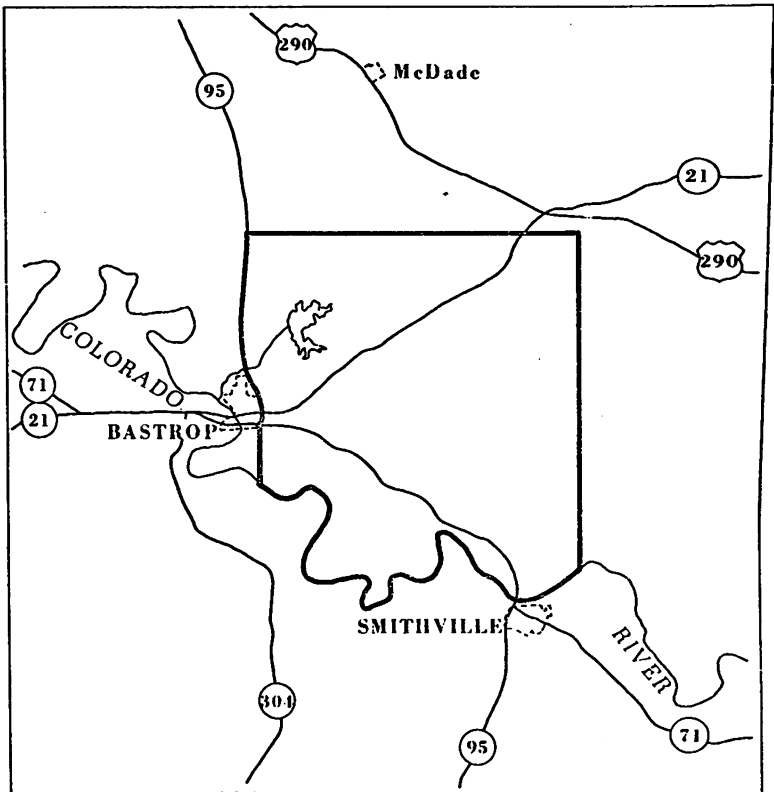
## PINE BARRENS TREEFROG

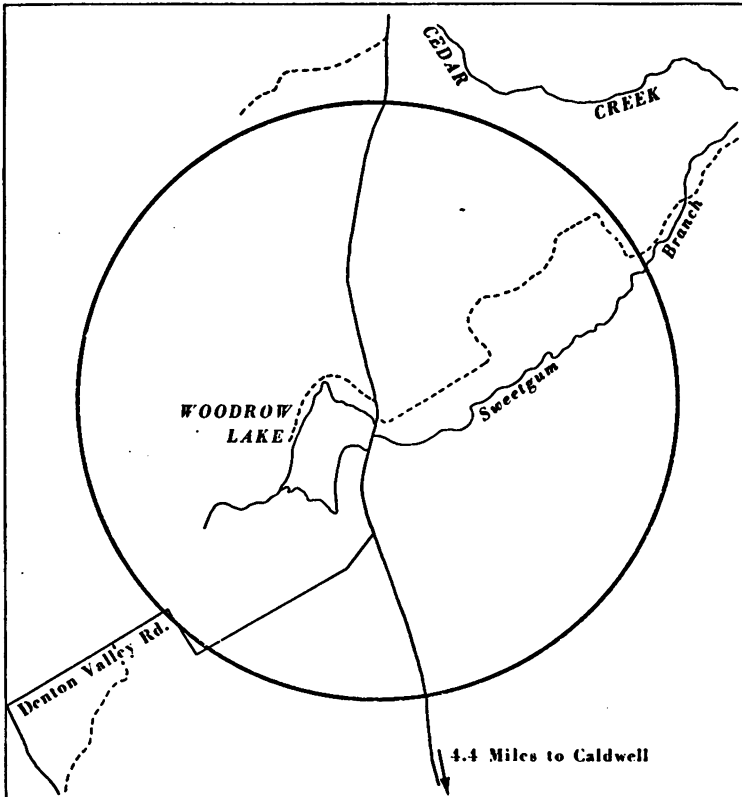
Okaloosa County, FLORIDA

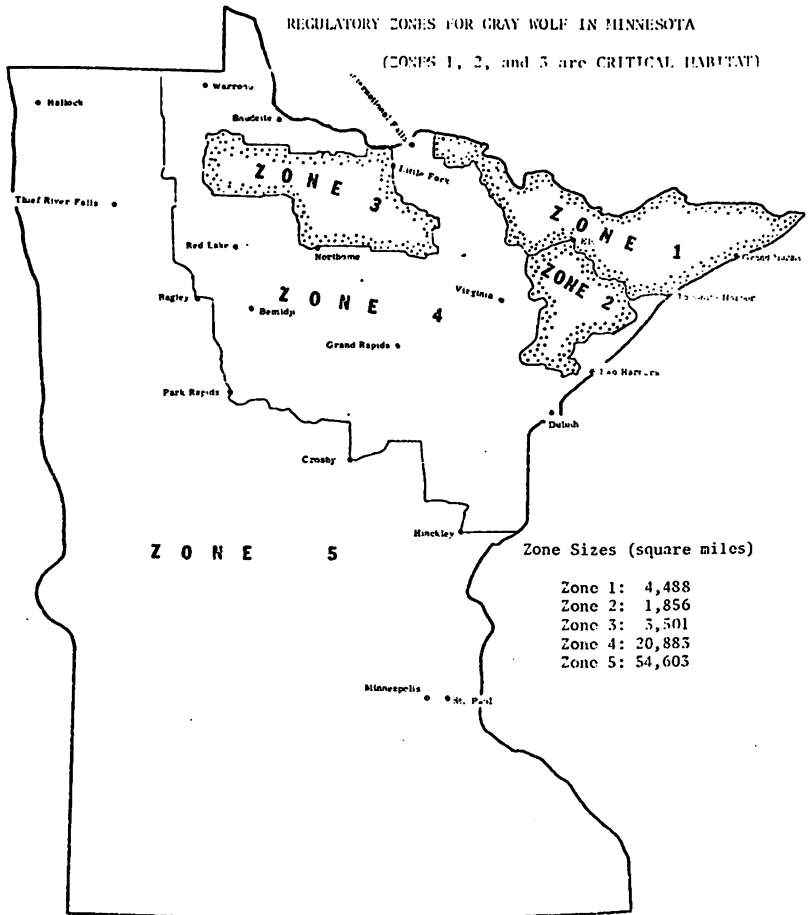


LEOPARD DARTER  
ARKANSAS and OKLAHOMA



**HOUSTON TOAD****Bastrop County, TEXAS**

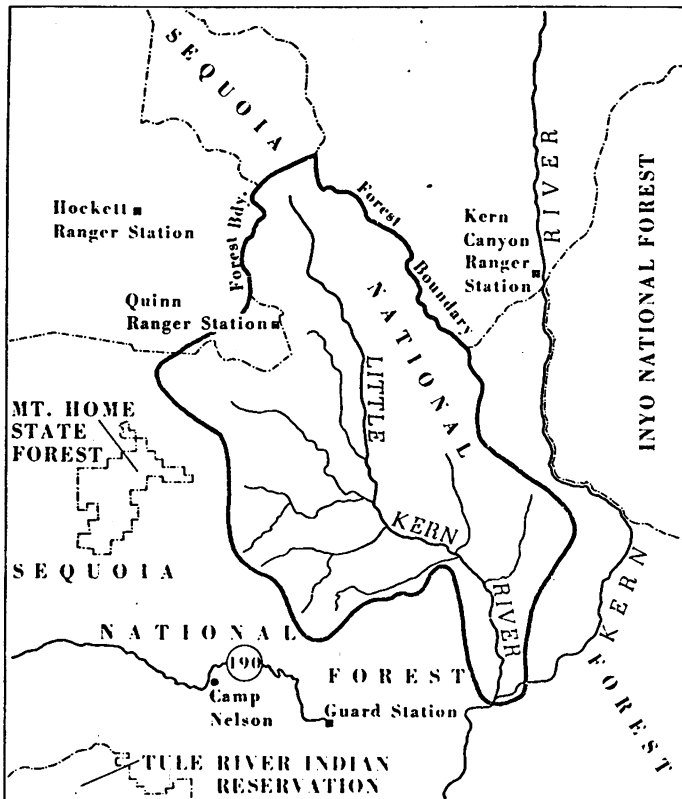
**HOUSTON TOAD****Burleson County, TEXAS**



3000 09 0765

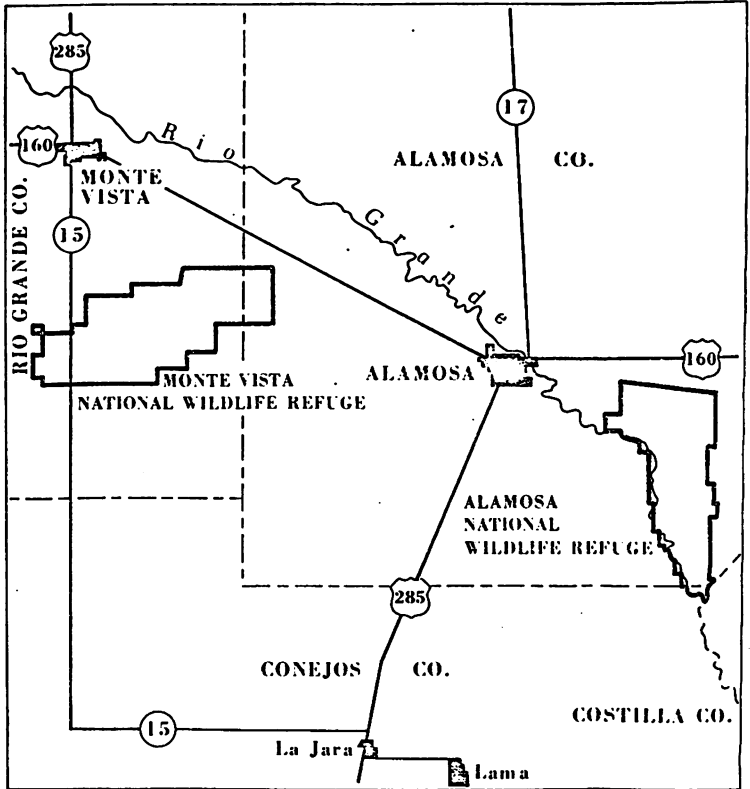
## LITTLE KERN GOLDEN TROUT

Tulare County, CALIFORNIA



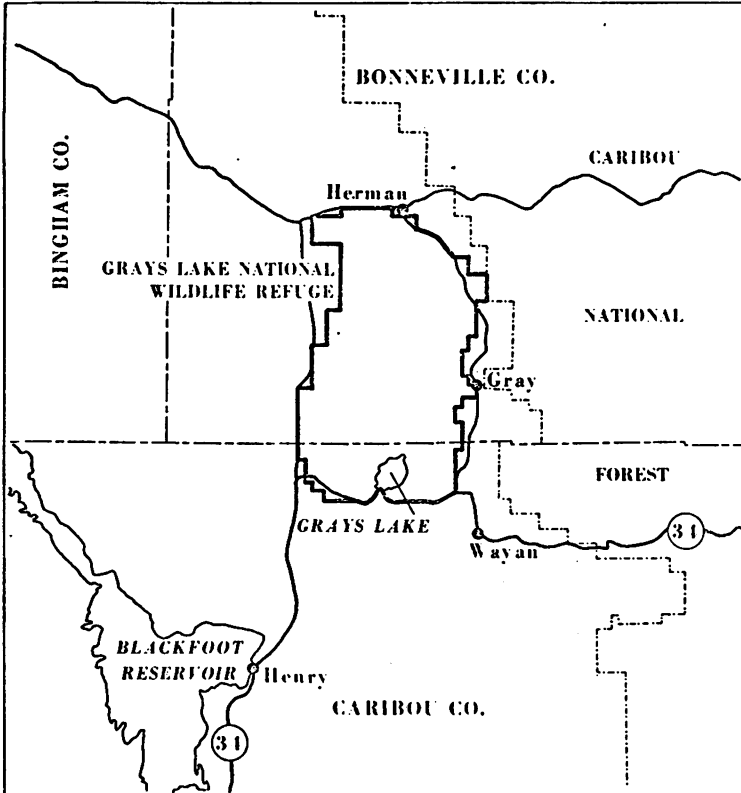
## WHOOPING CRANE

Alamosa, Costilla and Rio Grande Counties, COLORADO



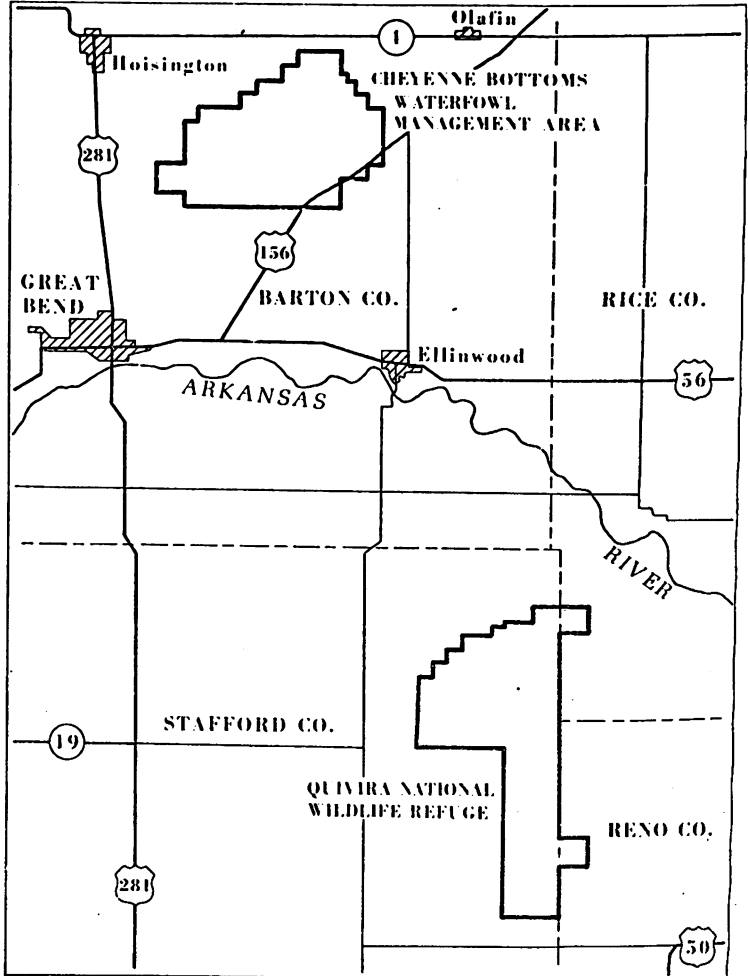


**WHOOPING CRANE**  
**Caribou & Bonneville Counties, IDAHO**



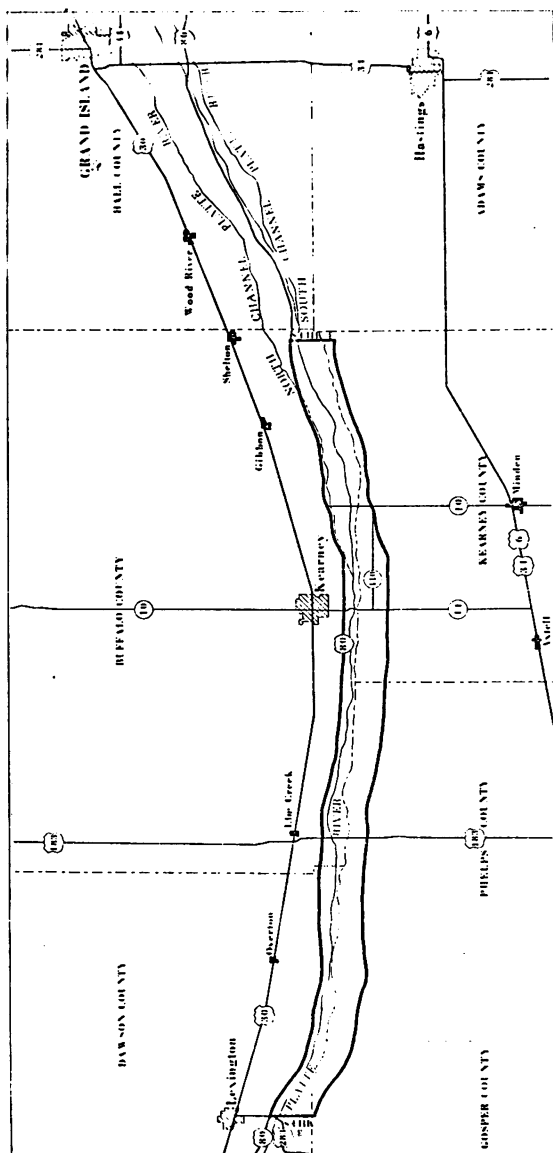
## WHOOPING CRANE

KANSAS



# WHOOPING CRANE

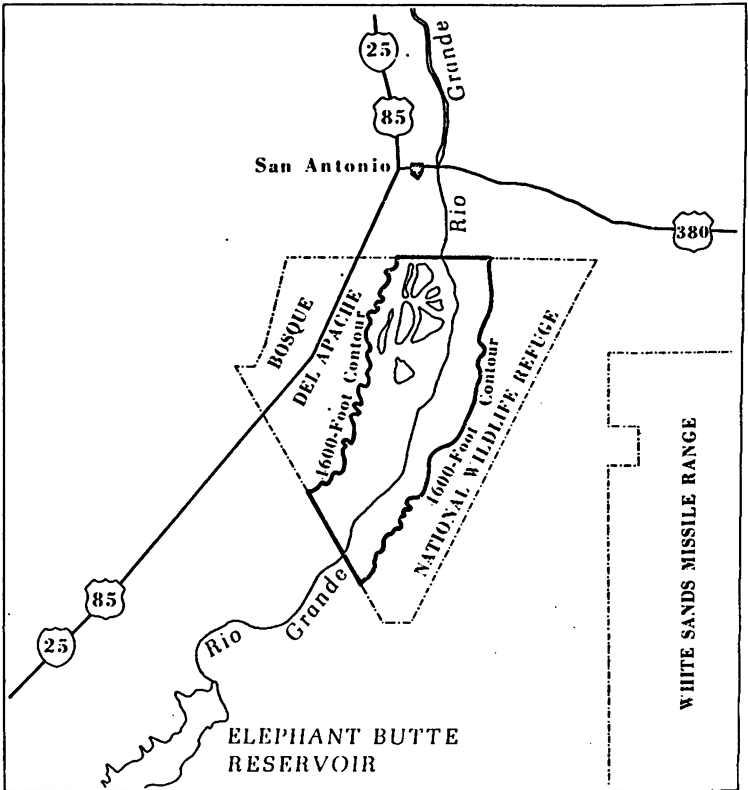
## NEBRASKA



20

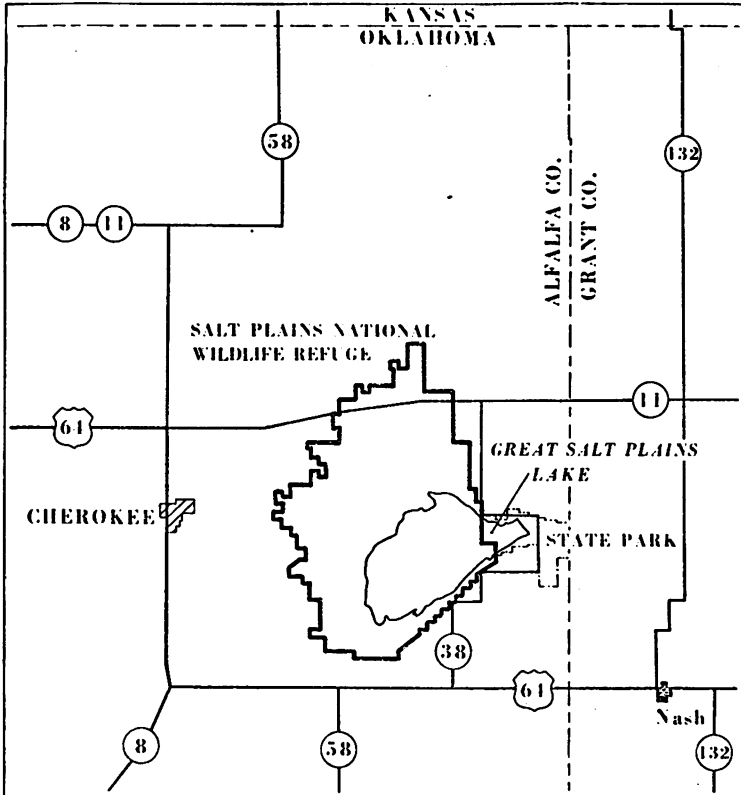
## WHOOPING CRANE

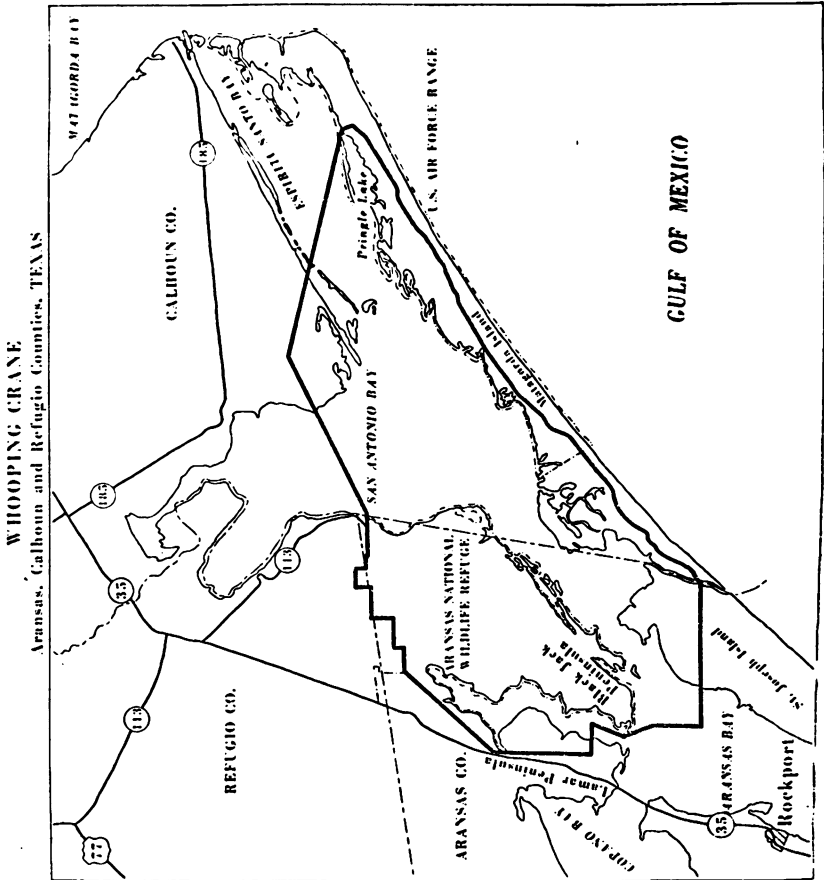
Socorro County, NEW MEXICO



**WHOOPING CRANE**

Alfalfa County, OKLAHOMA



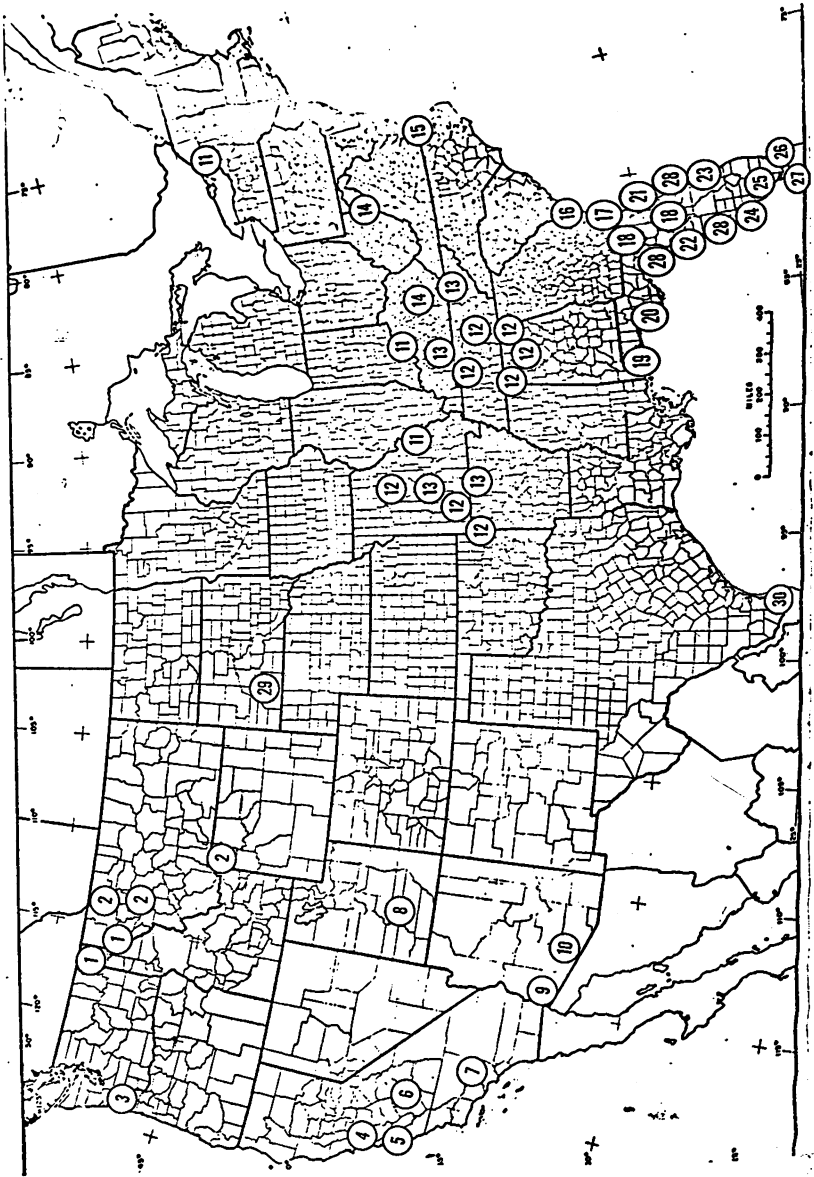


CRITICAL HABITAT ANTICIPATED TO BE LISTED IN 1978-79,  
(SUBMITTED BY DEPARTMENT OF INTERIOR)

MAMMALS

General locations of anticipated Critical Habitat  
for the following species are shown on the  
attached map

| <u>Species</u>                  | <u>Map</u>       | <u>Location</u> |
|---------------------------------|------------------|-----------------|
| Dismal Swamp Southeastern shrew | 15               |                 |
| Homossassa Shrew                | 22               |                 |
| Sherman's short-tailed shrew    | 24               |                 |
| Swamp short-tailed shrew        | 15               |                 |
| Gray bat                        | 12, 13           |                 |
| Indiana bat                     | 11, 13           |                 |
| Virginia big-eared bat          | 14               |                 |
| Utah prairie dog                | 8                |                 |
| Mohave ground squirrel          | 7                |                 |
| Mangrove fox squirrel           | 25               |                 |
| Goff's pocket gopher            | 23               |                 |
| Colonial pocket gopher          | 17               |                 |
| Sherman's pocket gopher         | 16               |                 |
| Cumberland Island pocket gopher | 17               |                 |
| Fresno Kangaroo rat             | 6                |                 |
| Salt Marsh harvest mouse        | 4                |                 |
| Pine Island rice rat            | 24               |                 |
| Cudjoe Key rice rat             | 27               |                 |
| Choctawhatchee beach mouse      | 20               |                 |
| Pallid beach mouse              | 21               |                 |
| Perdido Bay beach mouse         | 19               |                 |
| Alabama beach mouse             | 19               |                 |
| Key Largo cotton mouse          | 26               |                 |
| Lowea Key cotton rat            | 27               |                 |
| Captiva Island cotton rat       | 24               |                 |
| Key Largo woodrat               | 26               |                 |
| Southern bog lemming            | 15               |                 |
| Gray wolf                       | 2                |                 |
| Florida black bear              | 18, 25           |                 |
| Grizzly bear                    | 1, 2             |                 |
| Key Vaca raccoon                | 27               |                 |
| Everglades mink                 | 25               |                 |
| Black-footed ferret             | 29               |                 |
| Southern sea otter              | 5                |                 |
| Florida panther                 | 25               |                 |
| Yuma puma                       | 9                |                 |
| Ocelot                          | 30               |                 |
| Hawaiian monk seal              | Hawaii           |                 |
| Manatee                         | 28 + Puerto Rico |                 |
| Columbian white-tailed deer     | 3                |                 |
| Key deer                        | 27               |                 |
| Sonoran pronghorn               | 10               |                 |

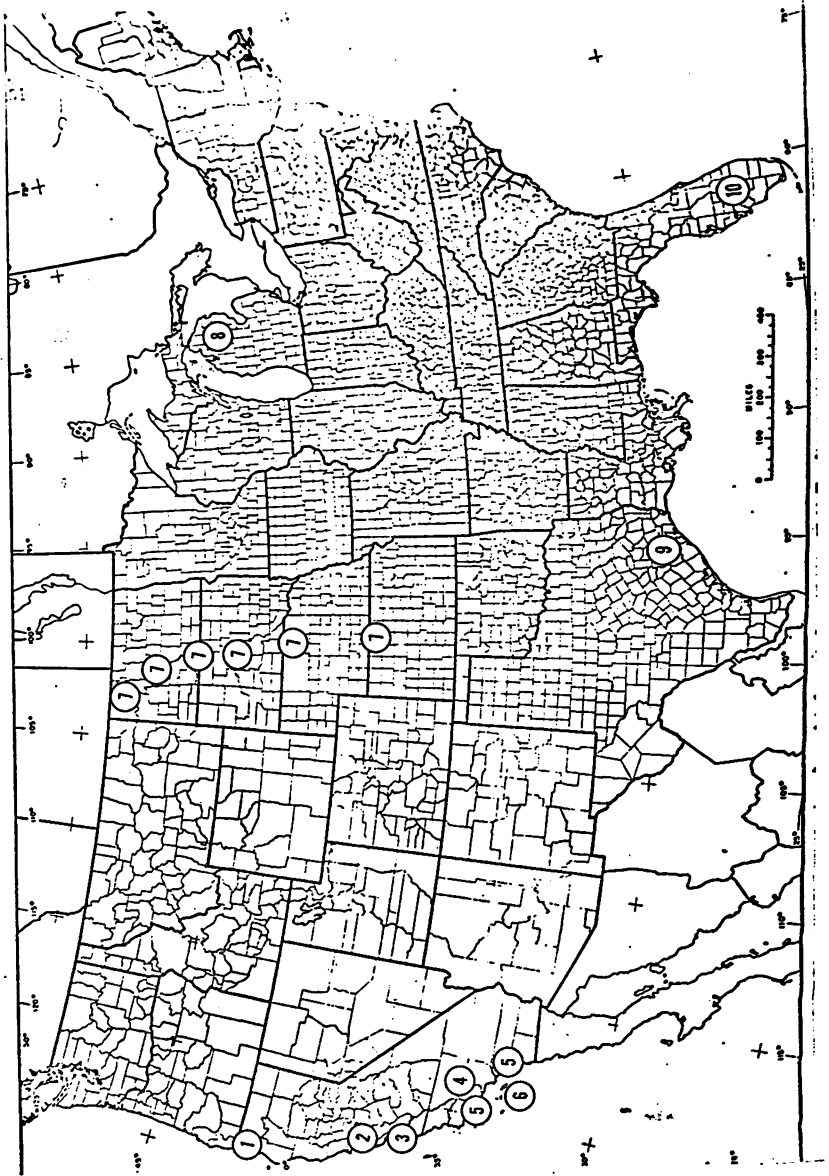




## BIRDS

General locations of anticipated Critical Habitat  
for the following species are shown on the  
attached map

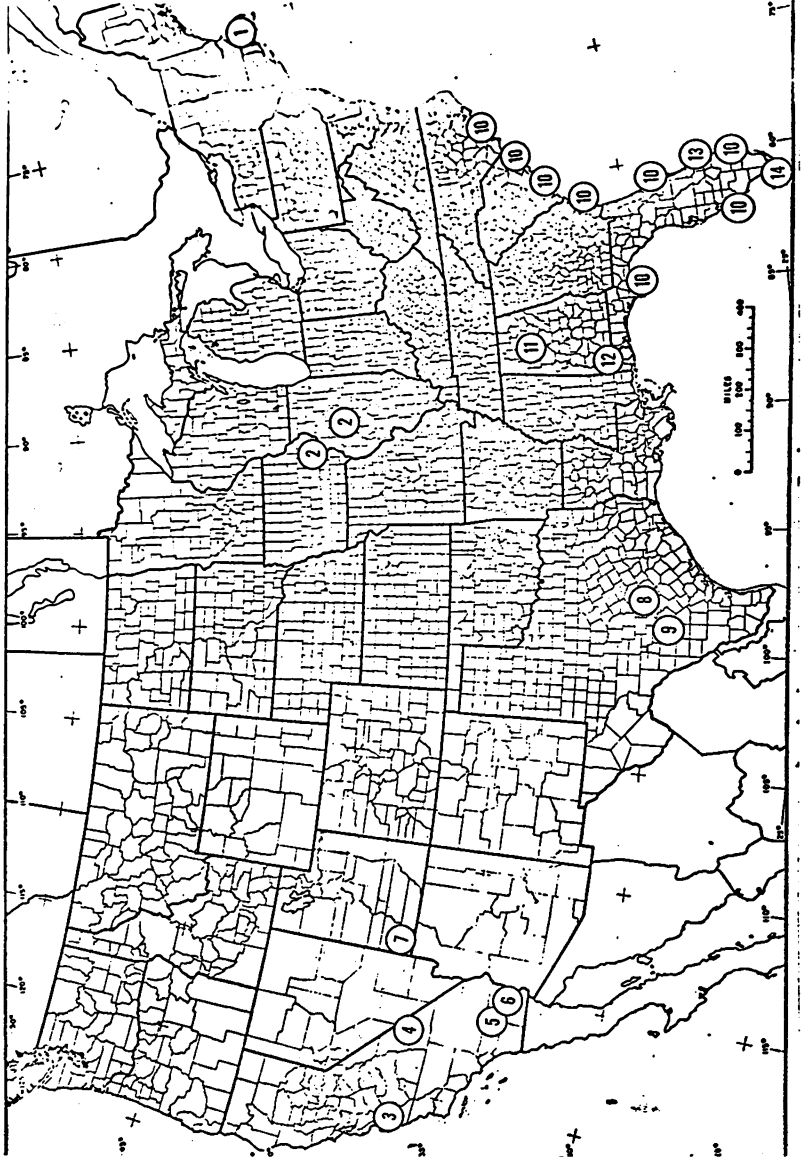
| <u>Species</u>                  | <u>Map Location</u> |
|---------------------------------|---------------------|
| Condor, California              | 4                   |
| Crane, Whooping                 | 7                   |
| Goose, Aleutian Canada          | 1                   |
| Rail, California clapper        | 2                   |
| Rail, light-footed              | 5                   |
| Shrike, San Clemente loggerhead | 6                   |
| Sparrow, San Clemente sage      | 6                   |
| Sparrow, Texas Henslow's        | 9                   |
| Stork, Wood                     | 10                  |
| Tern, California least          | 2, 3, 5             |
| Warbler, Kirtland's             | 8                   |
| Yellow throat, salt marsh       | 2                   |



## REPTILES AND AMPHIBIANS

General locations of anticipated Critical Habitat  
for the following species are shown on the  
attached map

| <u>Species</u>                                 | <u>Map Location</u>  |
|--|--|
| Plymouth red-bellied turtle                    | 1  |
| Illinois mud turtle                            | 2  |
| Santa Cruz long-toed salamander                | 3  |
| Black Toad                                     | 4  |
| Coachella Valley fringe-toed lizard            | 5  |
| Flat-tailed horned lizard                      | 6  |
| Beaver Dam Slope Population of Desert Tortoise | 7  |
| San Marcos salamander                          | 8  |
| Valdina Farms salamander                       | 9  |
| Loggerhead Sea Turtle                          | 10, 13, 14   |
| Flattened musk turtle                          | 11   |
| Alabama red-bellied turtle                     | 12   |
| Green sea turtle                               | 13, plus Hawaii, the<br>Pacific Trust Territory,<br>and American Samoa |
| Key Mud Turtle                                 | 14   |
| Monito Gecko                                   | Puerto Rico  |
| Virgin Islands Boa                             | Virgin Islands   |
| Leatherback Sea turtle                         | Virgin Islnds  |
| Hawksbill Sea turtle                           | Puerto Rico  |

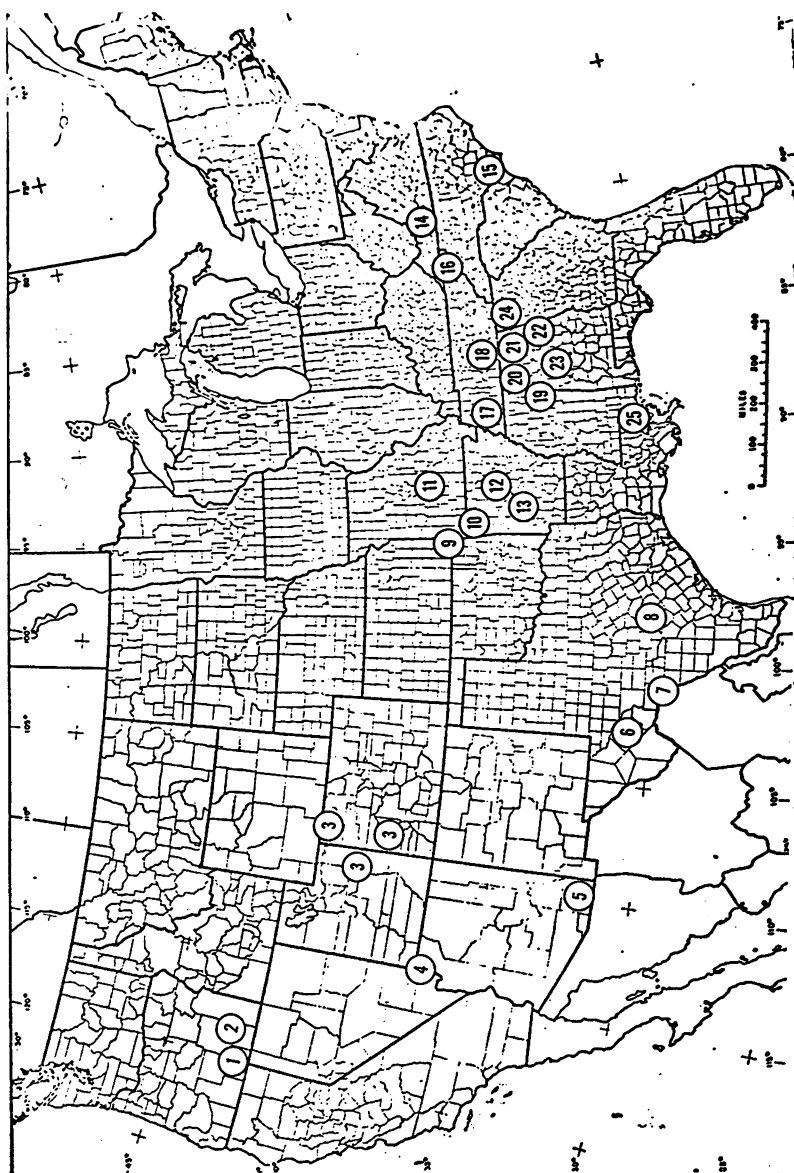


## FISH

General locations of anticipated Critical Habitat  
for the following species are shown on the  
attached map

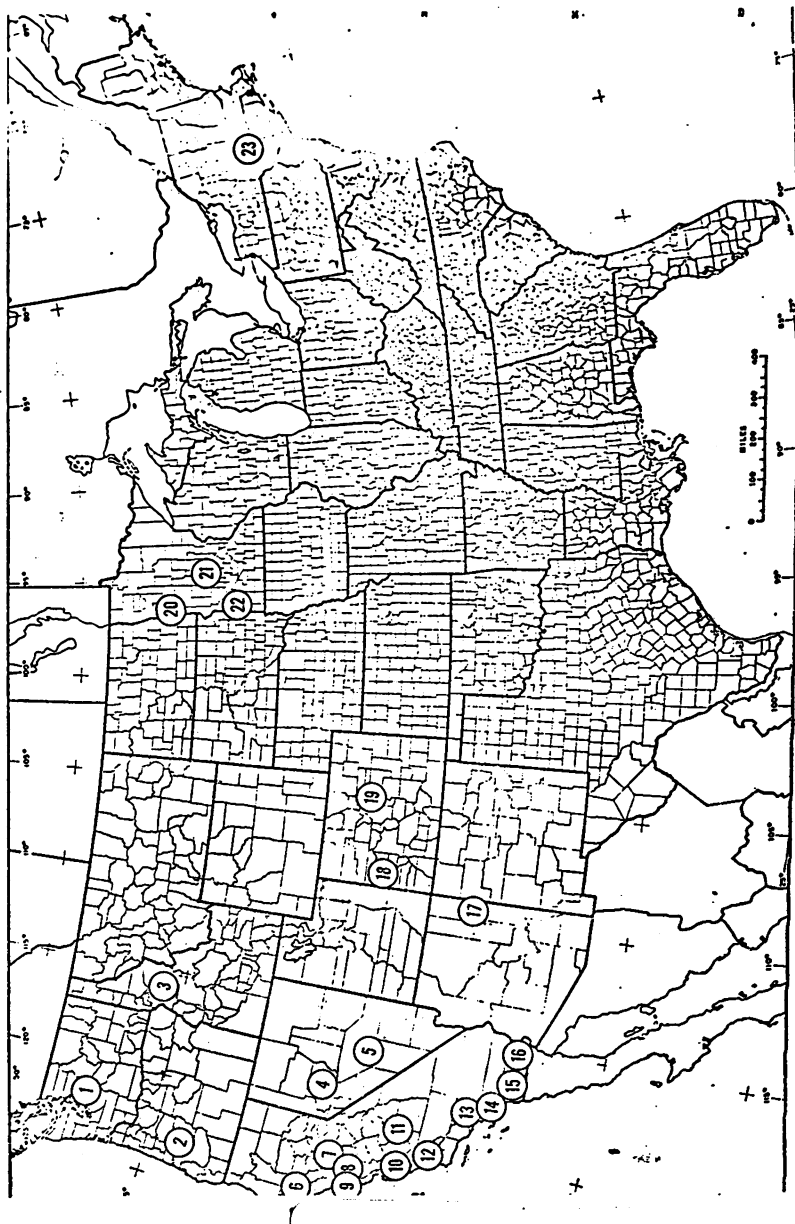
407

| <u>Species</u>       | <u>Map Location</u> |
|----------------------|---------------------|
| Warner sucker        | 1                   |
| Alvord chub          | 2                   |
| Borax chub           | 2                   |
| Squafish             | 3                   |
| Virgin River chub    | 4                   |
| Yaqui catfish        | 5                   |
| Yaqui sucker         | 5                   |
| Yaqui shiner         | 5                   |
| Yaqui stoneroller    | 5                   |
| Yaqui chub           | 5                   |
| Leon Springs pupfish | 6                   |
| Devils River Minnow  | 7                   |
| San Marcos gambusia  | 8                   |
| Neosho madtom        | 9                   |
| Ozark cavefish       | 10                  |
| Bluestripe darter    | 11                  |
| Niangue darter       | 11                  |
| Yellow cheek dater   | 12                  |
| Paleback darter      | 13                  |
| Caddo madtom         | 13                  |
| Ouachita madtom      | 13                  |
| Roanonke logperch    | 14                  |
| Orangefin madtom     | 14                  |
| Waccamaw Killifish   | 15                  |
| Waccamaw silverside  | 15                  |
| Waccamaw darter      | 15                  |
| Sharphead darter     | 16                  |
| Coppercheck darter   | 17                  |
| Tennessee madtom     | 16, 17              |
| Barrens topminnow    | 18                  |
| Freckled darter      | 19, 23, 25          |
| Frecklebelly madtom  | 18, 23, 24, 25      |
| Tuscumbia darter     | 20, 21              |
| Spring pygmy sunfish | 21                  |
| Pygmy sculpin        | 22                  |
| Coldwater darter     | 22, 24              |
| Cahaba shiner        | 23                  |
| Goldline darter      | 23                  |
| Trispot darter       | 24                  |
| Amber darter         | 24                  |



## 311 INSECTS

| Species  | Geographical Location |
|--|-----------------------|
| Lotus blue butterfly ( <u>L. argyrognomon lotis</u> )                      | 6                     |
| Laurens metalmark butterfly ( <u>A. mormo langei</u> )                     | 8                     |
| Salmon elfin butterfly ( <u>C. mossii bayensis</u> )                       | 9                     |
| Mission blue butterfly ( <u>I. icarioides missionensis</u> )               | 9                     |
| Smith's blue butterfly ( <u>S. enoptes smithi</u> )                        | 10                    |
| El Segundo blue butterfly ( <u>S. battoides allyni</u> )                   | 13                    |
| Dakota skipper butterfly ( <u>H. dacotae</u> )                             | 20,21,22              |
| Montane Pawnee skipper butterfly ( <u>H. pawnee montana</u> )              | 19                    |
| Callippe silverspot butterfly ( <u>S. callippe callippe</u> )              | 8,9                   |
| Great Basin silverspot butterfly ( <u>S. nokomis nokomis</u> )             | 18                    |
| Blue-black silverspot butterfly ( <u>S. nokomis nigrocaerulea</u> )        | 17                    |
| Oregon silverspot butterfly ( <u>S. zerene hippolyta</u> )                 | 2                     |
| Karner blue butterfly ( <u>L. melissa samuelis</u> )                       | 23                    |
| San Francisco tree lupine moth ( <u>G. edwardsiana</u> )                   | 9                     |
| Beller's ground beetle ( <u>Agonum belleri</u> )                           | 1                     |
| Sacramento anthicid beetle ( <u>Anthicus sacramento</u> )                  | 7                     |
| Globose dune beetle ( <u>Coelus globosus</u> )                             | 6,9,10,13,15          |
| San Joaquin dune beetle ( <u>Coelus gracilis</u> )                         | 10,11                 |
| Mojave rabbitbrush ( <u>C. mohavensis</u> )                                | 13                    |
| California elderberry longhorn beetle ( <u>D. californicus dimorphus</u> ) | 7                     |
| Delta green ground beetle ( <u>Elaphrus viridis</u> )                      | 7                     |
| Robinson's rain scarab beetle ( <u>Phobetus robinsoni</u> )                | 14                    |
| Andrew's dune scarab beetle ( <u>P. andrewsi</u> )                         | 16                    |
| Giuliani's dune scarab beetle ( <u>P. giulianii</u> )                      | 5                     |
| Rydyk longhorn beetle ( <u>N. rudei</u> )                                  | 12                    |
| Gabb's tiger beetle ( <u>C. gabbi</u> )                                    | 14,15                 |
| Large aegialia scarab ( <u>A. magnifica</u> )                              | 5                     |
| Crescent Dune aegialia scarab beetle ( <u>A. crescenta</u> )               | 5                     |
| Hardy's aegialia scarab beetle ( <u>A. hardyi</u> )                        | 4                     |
| Ciervo aegialia scarab beetle ( <u>A. concinna</u> )                       | 11                    |
| Columbia River tiger beetle ( <u>C. columbica</u> )                        | 3                     |





## MOLLUSKS (Clams)

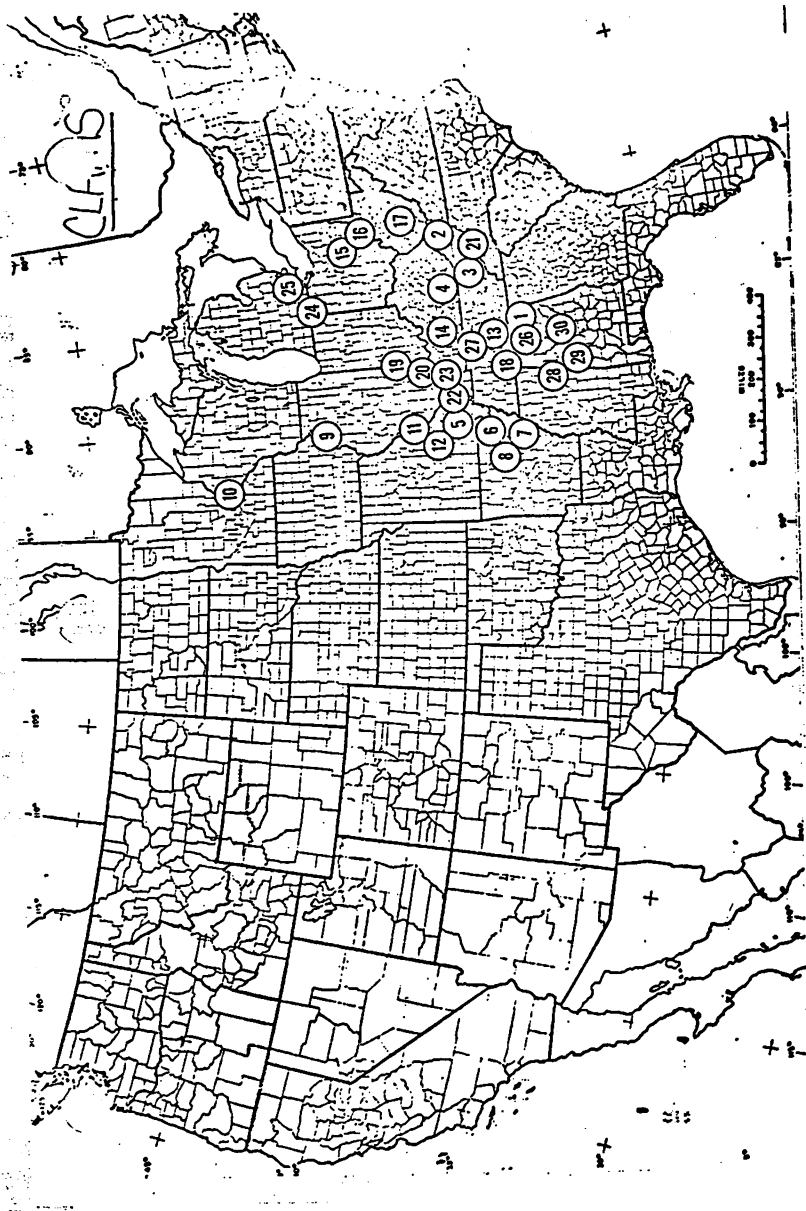
| Species  | Geographical Location |
|--|-----------------------|
| ama lamp pearly mussel ( <u>Lampsilis virescens</u> )                  | 1                     |
| Appalachian monkey face pearly mussel ( <u>Quadrula sparsa</u> )       | 2,3                   |
| Cumberland bean pearly mussel ( <u>Villosa trabilis</u> )              | 4                     |
| Curtis' pearly mussel ( <u>Dysnomia florentina curtisi</u> )           | 5                     |
| Dromedary pearly mussel ( <u>Dromus dromas</u> )                       | 2,3                   |
| Fat pocketbook pearly mussel ( <u>Potamilus capax</u> )                | 6,7,8                 |
| Fine-rayed pigtoe pearly mussel ( <u>Fusconsis cuneolus</u> )          | 1,3                   |
| Greenblossom pearly mussel ( <u>Dysnomia torulosa gubernaculum</u> )   | 2,3,9                 |
| Higgin's eye pearly mussel ( <u>Lampsilis higginsii</u> )              | 10,11,12              |
| Pale lilliput pearly mussel ( <u>Toxolasma cylindrella</u> )           | 13                    |
| Pink mucket pearly mussel ( <u>Lampsilis orbiculata</u> )              | 1,14,15,16,17,18      |
| Rough pigtoe pearly mussel ( <u>Pleurobema plenum</u> )                | 1,3,14,18             |
| Sampson's pearly mussel ( <u>Dysnomia sampsoni</u> )                   | 19,20                 |
| Shiny pigtoe pearly mussel ( <u>Fusconsis edgariana</u> )              | 3,12                  |
| Tuberculed-blossom pearly mussel ( <u>Dysnomia torulosa torulosa</u> ) | 1,2,17,22,23          |
| Turgid-blossom mussel ( <u>Dysnomia turgidula</u> )                    | 14                    |
| White cat's eye pearly mussel ( <u>Dysnomia sulcata delicata</u> )     | 24,25                 |
| White wartback pearly mussel ( <u>Plethobasis cicatriosus</u> )        | 1,18,26               |
| Yellow-blossom pearly mussel ( <u>Dysnomia florentina florentina</u> ) | 13                    |
| Orange-footed pearly mussel ( <u>Plethobasis cooperianus</u> )         | 13,18,26              |
| Tan ruffle shell clam ( <u>Epioblasma walkeri</u> )                    | 2,13,27               |
| Cumberland monkey face pearly mussel ( <u>Quadrula intermedia</u> )    | 2,3,13                |
| Red-wing pearly mussel ( <u>Conradilla caelata</u> )                   | 2,3,13                |
| <u>Pleurobema marshalli</u>  | 28,29                 |
| <u>Pleurobema taitianum</u>  | 28,29                 |
| Stirrup shell ( <u>Quadrula stapes</u> )                               | 28,29                 |
| <u>Epioblasma penita</u>   | 28,29                 |
| <u>Pleurobema curtum</u>   | 28,29                 |
| <u>Pleurobema decisum</u>  | 28,29,30              |
| <u>Epioblasma metastriata</u>  | 30                    |

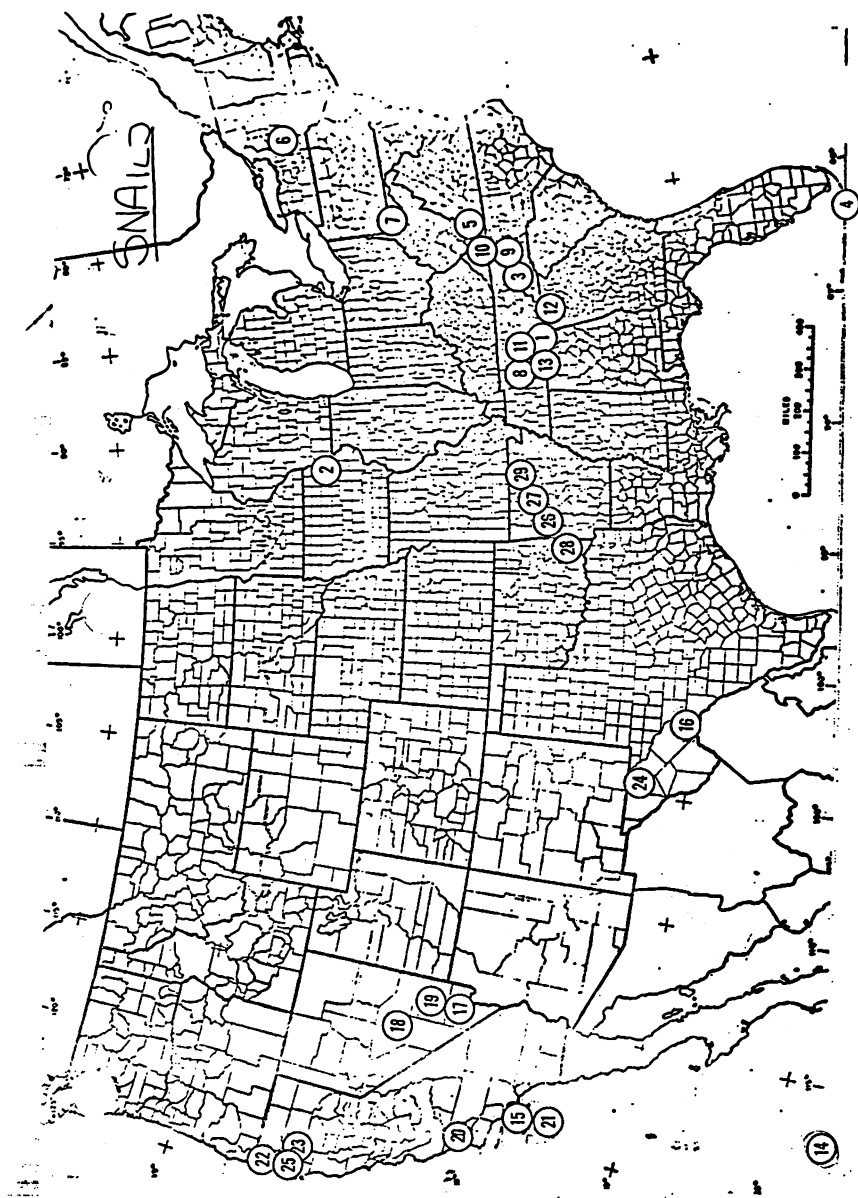
## MOLLUSKS (Snails)

| Species   | Geographical Location |
|---|-----------------------|
| Painted snake coiled forest snail ( <u>Anquipsira picta</u> )       | 1                     |
| Iowa pleistocene snail ( <u>Discus macclintocki</u> )               | 2                     |
| Noonday snail ( <u>Mesodon clarki nanthahalia</u> )                 | 3                     |
| Stock Island tree snail ( <u>Orthalicus reses</u> )                 | 4                     |
| Virginia fringed mountain snail ( <u>Polygyrisus virginianus</u> )  | 5                     |
| Chittenango ovate amber anail ( <u>Succinea chittenangoensis</u> )  | 6                     |
| Flat-spined three-toothed snail ( <u>Triodopsis platysayoides</u> ) | 7                     |
| Pleurocera ( <u>Pleurocera</u> spp.)                                | 8,9                   |
| <u>Spirodon virgata</u>   | 10                    |
| Umbilicate river snail ( <u>Anculosa umbilicata</u> )               | 11                    |
| <u>Anculosa</u> sp.   | 9                     |
| Harpeth River snail ( <u>Anculosa harpethensis</u> )                | 11                    |
| arn's river snails ( <u>Athearnia</u> sp.)                          | 12,13                 |
| tree snails ( <u>Achatinella</u> sp.)                               | 14                    |

## Snails (cont'd)

| <u>Species</u>  | <u>Geographical Location</u> |
|---|------------------------------|
| snail ( <i>Binneya notabilis</i> )  | 15                           |
| Phantom Spring snail ( <i>Cochiopa texana</i> )                             | 16                           |
| Muddy Valley turban snail (" <i>Fluminicola</i> " <i>avernalis</i> )        | 17                           |
| Ash Meadows turban snail (" <i>Fluminicola</i> " <i>erythropoma</i> )       | 18                           |
| Pahrnagat Valley turban snail (" <i>Fluminicola</i> " <i>merriami</i> )     | 19                           |
| Banded dune snail ( <i>Helminthoglypta walkeriana walkeriana</i> )          | 20                           |
| Fraternal snail ( <i>Micrarionta feralis</i> )                              | 21                           |
| Rocky-coast snail ( <i>Monadenia fidelis pronotus</i> )                     | 22                           |
| Bristle snail ( <i>Monadenia setosa</i> )                                   | 23                           |
| Cheatum's snail ( <i>Tryonia cheatumi</i> )                                 | 24                           |
| White River snail ( <i>Tryonia clathrata</i> )                              | 17, 18, 19                   |
| Karok Indian snail ( <i>Vespericola karokorum</i> )                         | 25                           |
| Jones' middle-toothed land snail ( <i>Mesodon jonesianus</i> )              | 3                            |
| Magazine mountain middle-toothed land snail ( <i>Nesodon magazinenses</i> ) | 26                           |
| Pilsbry's narrow apertured land snail ( <i>Stenotrema pilsbryi</i> )        | 27, 28                       |
| Strange many-whorled land snail ( <i>Polygyra peregrina</i> )               | 29                           |





## PLANTS

General locations of anticipated Critical Habitat  
for the following species are shown on the  
attached map

| <u>Species</u>                                    | <u>Map Location</u> |
|---|---------------------|
| I. California                                     |                     |
| <u>Arabis macdonaldiana</u>                       | 1                   |
| <u>Arctostaphylos hookeri</u> ssp. <u>ravenii</u> | 2                   |
| <u>Brodiaea coronaria</u> var. <u>rosea</u>       | 1                   |
| <u>Calochortus tiburonensis</u>                   | 2                   |
| <u>Castilleja grisea</u>                          | 6                   |
| <u>Castilleja uliginosa</u>                       | 1                   |
| <u>Clarkia franciscana</u>                        | 2                   |
| <u>Dedekera eurekaensis</u>                       | 5                   |
| <u>Delphinium kinkiense</u>                       | 6                   |
| <u>Dudleya traskiae</u>                           | 6                   |
| <u>Eriogonum apricum</u> var. <u>apricum</u>      | 3                   |
| <u>Eriogonum apricum</u> var. <u>prostratum</u>   | 1                   |
| <u>Eriogonum nudum</u> var. <u>murinum</u>        | 4                   |
| <u>Limnanthes bakeri</u>                          | 1                   |
| <u>Lotus scoparius</u> ssp. <u>traskiae</u>       | 6                   |
| <u>Malacothamnus clementinus</u>                  | 6                   |
| <u>Oenothera avita</u> ssp. <u>eurekaensis</u>    | 5                   |

| <u>Species</u>                                      | <u>Map</u> <u>Location</u> |
|---|----------------------------|
| <u>Orcuttia mucronata</u>                           | 2                          |
| <u>Pogogyne abramsii</u>                            | 7                          |
| <u>Sidalcea covillei</u>                            | 5                          |
| <u>Streptanthus niger</u>                           | 2                          |
| <u>Swallenia alexandrae</u>                         | 5                          |
| II. Northwest, Rocky Mountains, and Texas           |                            |
| <u>Allium aascae</u>                                | 22                         |
| <u>Arabis koehleri</u> var. <u>koehleri</u>         | 14                         |
| <u>Aster curtus</u>                                 | 12                         |
| <u>Aster gormanii</u>                               | 12                         |
| <u>Astragalus amnis-amissi</u>                      | 24                         |
| <u>Astragalus beatleyae</u>                         | 8                          |
| <u>Astragalus iselyi</u>                            | 32                         |
| <u>Astragalus osterhoutii</u>                       | 34                         |
| <u>Astragalus phoenix</u>                           | 8                          |
| <u>Astragalus schmollae</u>                         | 36                         |
| <u>Bensoniella oregana</u>                          | 13                         |
| <u>Botrychium pumicola</u>                          | 14                         |
| <u>Braya humilis</u> ssp. <u>ventosa</u>            | 35                         |
| <u>Calochortus longebarbatus</u> var. <u>peckii</u> | 16                         |

| <u>Species</u>  | <u>Map Location</u> |
|---|---------------------|
| <u>Camassia leichtlinii</u> var. <u>leichtlinii</u>     | 14                  |
| <u>Cardamine pattersonii</u>                            | 11                  |
| <u>Castilleja christii</u>                              | 25                  |
| <u>Collomia macrocalyx</u>                              | 15, 16, 20          |
| <u>Cordylanthus maritimus</u> ssp. <u>palustris</u>     | 13                  |
| <u>Cryptantha barnebyi</u>                              | 30                  |
| <u>Delphinium multiplex</u>                             | 10                  |
| <u>Delphinium nuttallianum</u> var. <u>lineapetalum</u> | 10                  |
| <u>Delphinium viridescens</u>                           | 10                  |
| <u>Delphinium xantholeucum</u>                          | 10                  |
| <u>Erigeron howellii</u>                                | 11                  |
| <u>Eriogonum gypsophilum</u>                            | 38                  |
| <u>Filipendula occidentalis</u>                         | 11                  |
| <u>Fritillaria adamantina</u>                           | 14                  |
| <u>Fritillaria gentneri</u>                             | 13                  |
| <u>Glaucocarpum suffrutescens</u>                       | 30                  |
| <u>Hackelia davisii</u>                                 | 23                  |
| <u>Ivesia rhypara</u>                                   | 20                  |
| <u>Lathyrus hitchcockianus</u>                          | 8                   |
| <u>Lesquerella macrocarpa</u>                           | 27                  |
| <u>Lesquerella pruinosa</u>                             | 37                  |
| <u>Limnanthes floccosa</u> ssp. <u>grandiflora</u>      | 14                  |

| <u>Species</u>                                | <u>Map Location</u> |
|---|---------------------|
| <u>Limnanthes floccosa</u> ssp. <u>pumila</u> | 14                  |
| <u>Lomatium bradshawii</u>                    | 12                  |
| <u>Mentzelia leucophylla</u>                  | 8                   |
| <u>Mentzelia mollis</u>                       | 21                  |
| <u>Mentzelia packardiae</u>                   | 20                  |
| <u>Mirabilis macfarlanei</u>                  | 18                  |
| <u>Nitrophila mohavensis</u>                  | 8                   |
| <u>Penstemon retrorsus</u>                    | 33                  |
| <u>Phacelia argillacea</u>                    | 29                  |
| <u>Phacelia beatleyae</u>                     | 8                   |
| <u>Phacelia submutica</u>                     | 33                  |
| <u>Phlox idahonis</u>                         | 19                  |
| <u>Psoralea kingii</u>                        | 26                  |
| <u>Senecio ertterae</u>                       | 20                  |
| <u>Sphaeromeria simplex</u>                   | 28                  |
| <u>Stephanomeria malheurensis</u>             | 17                  |
| <u>Thelypodopsis argillacea</u>               | 30                  |
| <u>Townsendia aprica</u>                      | 31                  |
| <u>Trifolium owyheense</u>                    | 20                  |
| <u>Trifolium thompsonii</u>                   | 10                  |
| <u>Viola flettii</u>                          | 9                   |
| <u>Zizania texana</u>                         | 39                  |

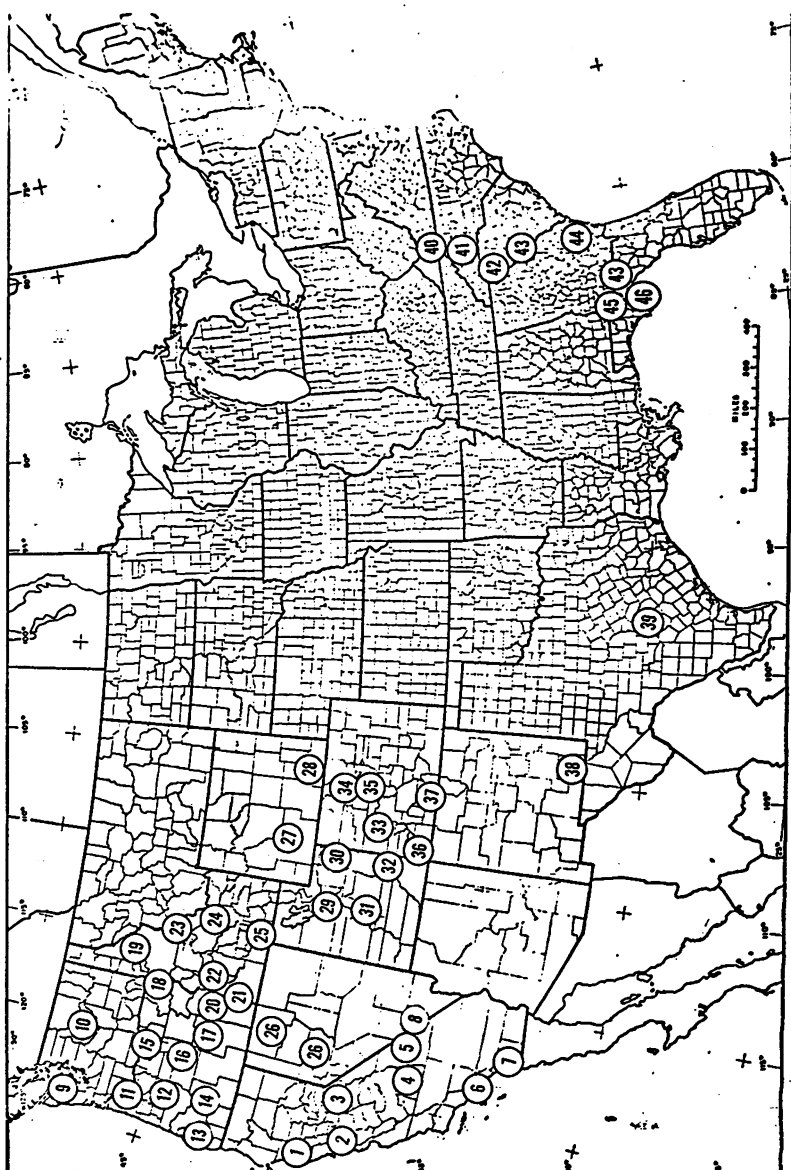


SpeciesMap Location

## III. Southeastern United States

|                               |             |
|-------------------------------|-------------|
| <u>Baptisia arachnifera</u>   | 44          |
| <u>Betula uber</u>            | 40          |
| <u>Harperocallis flava</u>    | 46          |
| <u>Hudsonia montana</u>       | 41          |
| <u>Ribes echinellum</u>       | 43          |
| <u>Sagittaria fasciculata</u> | 42          |
| <u>Taxus floridana</u>        | 46          |
| <u>Torreya taxifolia</u>      | 45          |
| <u>Trillium persistens</u>    | 42          |
| <u>Banara vanderbiltii</u>    | Puerto Rico |

NOTE: Hawaii anticipated Critical Habitats not mapped



SPECIES LISTINGS to be listed in 1978-1979

## MAMMALS

| COMMON NAME                     | SCIENTIFIC NAME                        | STATES/COUNTIES  | PETITIONER  | PRIORITY |
|---------------------------------|--|--|---|----------|
| Great Horned Owl                | <u>Sorex longirostris fischeri</u>     | North Carolina (Camden and Currituck counties), Virginia (City of Chesapeake and Nansemond County) |   | 8        |
| Honassusa Shrew                 | <u>Sorex longirostris eionis</u>       | Florida (Citrus County)  |   | 6        |
| Sherman's short-tailed shrew    | <u>Blarina brevicauda shermani</u>     | Florida (Lee County)   |   | 6        |
| Scarp short-tailed shrew        | <u>Blarina telmalestes</u>             | Virginia (City of Chesapeake and Nansemond County)   |   | 7        |
| Virginia big-eared bat          | <u>Plecotus townsendii ingens</u>      | Kentucky (eastern half), Virginia (western quarter), West Virginia (all)                           | Professor John S. Hall<br>Albright College<br>Reading, Pennsylvania | 2        |
| Ozark big-eared bat             | <u>Plecotus townsendii virginianus</u> | Arkansas (northwestern quarter), Missouri (southwestern quarter), Oklahoma (eastern fourth)        | same  | 2        |
| Behave Ground Squirrel          | <u>Spermophilus mohavensis</u>         | California (Kern, San Bernardino, and Ventura counties)  |   | 6        |
| Ningrove fox squirrel           | <u>Sciurus niger avicommia</u>         | Florida (Collier, Hendry, Lee counties)  |   | 6        |
| Sherman's fox squirrel          | <u>Sciurus niger shermani</u>          | Florida (east of Suwannee River and north of Lake Okeechobee)                                      |   | 10       |
| Goff's Pocket Gopher            | <u>Geomys pinetis goffi</u>            | Florida (Brevard County)   |   | 6        |
| Colonial Pocket Gopher          | <u>Geomys colonus</u>                  | Georgia (Camden County)  |   | 1        |
| Sherman's Pocket Gopher         | <u>Geomys fontinalis</u>               | Georgia (Chatham County)   |   | 1        |
| Cumbarland Island Pocket Gopher | <u>Geomys cumbarlandius</u>            | Georgia (Camden County)  |   | 1        |
| Fresno Kangaroo Rat             | <u>Dipodomys nitratoides exilis</u>    | California (Fresno County)   |   | 2        |

To be listed in 1978-1979

MAMMALS

## SPECIES LISTINGS

CO. NAME

SCIENTIFIC NAME

STATES/COUNTIES

PETITIONER

PRIORITY

Nine Island Rice Rat

Oryzomys palustris planirostris

Florida (Lee County)

12

Cudjoe Key Rice Rat

Oryzomys SP.

Florida (Nonroe County)

2

Choctawhatchee Beach Mouse

Peromyscus polionotus allophrys

Florida (Bay, Okaloosa, and Walton counties)

6

Pallid Beach Mouse

Peromyscus polionotus decoloratus

Florida (Flagler, St. Johns, and Volusia counties)

2

Perdido Bay Beach Mouse

Peromyscus polionotus trissyllepsisFlorida (Escambia County),  
Alabama (Baldwin County)

6

Alabama Beach Mouse

Peromyscus polionotus ammohabes

Alabama (Baldwin County)

2

Key Largo Cotton Mouse

Peromyscus gossypinus allapaticola

Florida (Nonroe County)

2

Florida Mouse

Peromyscus floridanus

Florida (central and eastern)

11

Lower Keys Cotton Rat

Sigmodon hispidus exsputus

Florida (Nonroe County)

6

Captiva Island Cotton Rat

Sigmodon hispidus insulicola

Florida (Charlotte and Lee counties)

12

Key Largo Hood Rat

Neotoma floridana smalli

Florida (Nonroe County)

2

Gunner's Red-Backed Mouse

Clethrionomys gapperi maurisKentucky (Bell and Harlan counties),  
Virginia (Lee, Scott, and Wise counties)

6

Louisiana Vole

Microtus ludovicianus

Louisiana (Calcasieu Parish)

3

Southern Bog Lemming

Synaptomys cooperi healeates

North Carolina (Camden and Currituck counties), Virginia (City of Chesapeake and Nansemond County)

6

To be listed in 1978-1979

Mammals

Bureau of

Listed in 1978-1979

| COMMON NAME        | SCIENTIFIC NAME                    | STATES/COUNTIES   | PETITIONER | PRIORITY |
|--------------------|------------------------------------|---|------------|----------|
| Florida Black Bear | <u>Ursus americanus floridanus</u> | Florida (scattered throughout).   |            | 6        |
| Gray Vaca Raccoon  | <u>Procyon lotor nushkiatus</u>    | Florida (Monroe County)   |            | 6        |
| Florida Weasel     | <u>Mustela frenata peninsulæ</u>   | Florida (central)   |            | 10       |
| Everglades Mink    | <u>Mustela vison evergladensis</u> | Florida (southern)  |            | 10       |
| Yuma Puma          | <u>Felis concolor browni</u>       | Arizona (Mohave and Yuma counties)<br>California (Imperial, Riverside, and San Bernardino counties) |            | 6        |

SPECIES LISTINGS Species which may be added by end of FY 1979

BIRDS

| CO. NAME                                 | SCIENTIFIC NAME                   | STATES/COUNTIES  | PETITIONER                         | PRIORITY |
|--|-----------------------------------|--|------------------------------------|----------|
| <u>TEXAS:</u><br>Texas Henslow's Sparrow | <u>Passerculus henslowii</u> ssp. | <u>Tx/Harris and perhaps other surrounding counties</u>  | none - so far                      | 2        |
| Wood Stork                               | <u>Nycteria americana</u>         | <u>Florida - statewide distribution</u>  | Nat. Audubon Soc. State of Florida | 7        |
| Salt Marsh Yellow throat                 | <u>Geothlypis trichas sinuosa</u> | <u>California - Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, San Mateo, and Santa Clara</u> | San Jose State University          | 6        |

| CONC | JCE | SCIENTIFIC NAME             | STATES/COUNTIES   | PETITIONER | PRIORITY |
|------|-----|-----------------------------|---|------------|----------|
|      |     | <u>Spring Pygmy Sunfish</u> |   |            |          |
|      |     | <u>Pygmy Sculpin</u>        | Alabama: Limestone County   | N/A        | 1        |
|      |     | <u>Chub</u>                 | Alabama: Calhoun County   | N/A        | 1        |
|      |     | <u>Shiner</u>               | Alabama: Bibb, Shelby & Jefferson Counties  | N/A        | 1        |
|      |     | <u>Goldfinch</u>            | Alabama: Bibb, Shelby Counties  | N/A        | 1        |
|      |     | <u>Darter</u>               | Georgia: Gilmer   | N/A        | 1        |
|      |     | <u>Mudminnow</u>            | North Carolina: Columbus County   | N/A        | 1        |
|      |     | <u>Silverside</u>           | North Carolina: Columbus County   | N/A        | 1        |
|      |     | <u>Darter</u>               | North Carolina: Columbus County   | N/A        | 1        |
|      |     | <u>Topminnow</u>            | Tennessee: Coffee County  | N/A        | 1        |
|      |     | <u>Noddy</u>                | Arkansas: Garland & Saline Counties   | N/A        | 1        |
|      |     | <u>San Marcos Gambusia</u>  | Texas: Hays County  | N/A        | 1        |
|      |     | <u>Goodenough Gambusia</u>  | Extinct in its Native Habitat. Presently being held in captivity at Dexter National Fish Hatchery & Univ. of Texas. | N/A        | 1        |
|      |     | <u>Loon Springs Pupfish</u> | Texas: Pecos County   | N/A        | 1        |
|      |     | <u>Devil's River Minnow</u> | Texas: Val Verde County   | N/A        | 1        |

SPECIES LISTINGS Anticipated in 1978-1979

FISH

Page 2 of 5

| SPECIES          | SCIENTIFIC NAME          | COUNTIES  | PETITIONER | PRIORITY |
|------------------|--------------------------|---|------------|----------|
| Humpback Chub    | <u>Gila Elegans</u>      | <p>II</p> <p>Arizona: Mohave &amp; Coconino Counties<br/>           California: San Bernardino<br/>           Nevada: Clark<br/>           Colorado: Delta, Garfield, Mesa, Moffat<br/>           Counties.<br/>           Utah: Carbon, Emery, Grand San Juan,<br/>           Wayne Counties</p> | N/A        | 1        |
| Razorback Sucker | <u>Xyrauchen Texanus</u> | <p>Arizona: Mohave &amp; Coconino Counties<br/>           California: San Bernardino<br/>           Nevada: Clark<br/>           Colorado: Delta, Garfield, Mesa, Moffat<br/>           Counties.<br/>           Utah: Carbon, Emery, Grand San Juan,<br/>           Wayne Counties</p>           | N/A        | 1        |



## SILURUS LISTING

## NAME

## SCIENTIFIC NAME

## STATES/COUNTIES

## PETITIONER

## PRIORITY

|                           |                                   |  |     |   |
|---------------------------|-----------------------------------|--|-----|---|
| Warner Sucker             | <u>Catostomus wagnerensis</u>     | Oregon: Lake County  | N/A | 1 |
| Alvord Chub               | <u>Gila alvordensis</u>           | Oregon: Harney County  | N/A | 1 |
| Borax Chub                | <u>Gila sp.</u>                   | Oregon: Harney County  | N/A | 1 |
| Shortnose Sucker          | <u>Chasmistes brevirostris</u>    | California: Siskiyou County  | N/A | 1 |
| Little Colorado Spinedace | <u>Leiodonmedia vittata</u>       | Arizona: Coconino, Navajo & Apache Counties  | N/A | 1 |
| Ozark Cavefish            | <u>Amblyopsis rosae</u>           | Arkansas: Benton, Washington Counties<br>Oklahoma: Ottawa, Delaware & Mayer Counties<br>Missouri: Stone, Greene, Barry, Jasper & Newton Counties | N/A | 1 |
| Neosho Madtom             | <u>Noturus placidus</u>           | Kansas: Allen, Coffey, Neosho, Cherokee, Labette & Woodson, Chase & Lyon Counties.<br>Oklahoma: Sequoyah County.<br>Missouri: Jasper             | N/A | 1 |
| Bluestripe Darter         | <u>Percina cymatotaenia</u>       | Missouri: Wright, Texas, Webster, Dallas, Laclede, Pulaski, Cameron Counties.  | N/A | 1 |
| Niangua Darter            | <u>Etheostoma nianguae</u>        | Missouri: Osage, Muer, Dallas, Camden, Hickory, Green, Webster, St. Clair & Polk Counties  | N/A | 1 |
| Yaqui Catfish             | <u>Ictalurus pricei</u>           | Arizona: Cochise County  | N/A | 1 |
| Yaqui Sucker              | <u>Catostomus bernardini</u>      | Arizona: Cochise County  | N/A | 1 |
| Yaqui Shiner              | <u>Notropis formosus nearnsi</u>  | Arizona: Cochise County  | N/A | 6 |
| Yaqui Stoneroller         | <u>Camptostoma ornatum pricei</u> | Arizona: Cochise County  | N/A | 6 |
| Yaqui Chub                | <u>Gila purpurea</u>              | Arizona: Cochise County  | N/A | 1 |

## SWALLOW LISTING

Anticipated in 1978-1979

FISH

Page 4 of 5

| NAME               | SCIENTIFIC NAME             | STATES/COUNTIES  | PETITIONER | PRIORITY |
|--------------------|-----------------------------|--|------------|----------|
| Freckled Darter    | <u>Percina lentigula</u>    | Alabama: Bibb, Wilcox, Perry & Wilcox Counties.<br>Georgia: Etowah County.<br>Louisiana: Washington & St. Tammany Counties.<br>Mississippi: Simpson, Jones, Clay, Lowndes & Pearl River Counties.                    | N/A        | 1        |
| Frecklebelly Noddy | <u>Noturus munus</u>        | Alabama: Bibb, Perry, Sumter, Pickens Counties.<br>Georgia: Murray County.<br>Mississippi: Lowndes, Clay, Monroe, Pearl River, Marion, Lawrence & Simpson Counties.<br>Louisiana: St. Tammany & Washington Counties. | N/A        | 1        |
| Sharphead Darter   | <u>Etheostoma acuticeps</u> | Tennessee: Cooke, Hamblen Counties<br>Virginia: Washington County  | N/A        | 1        |
| Colowater Darter   | <u>Etheostoma ditrema</u>   | Alabama: Calhoun, Etowah Counties<br>Georgia: Whitfield<br>Tennessee: Polk & Bradley Counties.   | N/A        | 1        |
| Yellowcheck Darter | <u>Etheostoma moorei</u>    | Arkansas: Cicburne & Van Buren Counties  | N/A        | 1        |
| Trispot Darter     | <u>Etheostoma trisella</u>  | Georgia: Murray County<br>Tennessee: Polk & Bradley Counties   | N/A        | 1        |
| Coppercheck Darter | <u>Etheostoma aquali</u>    | Tennessee: Bedford, Maury, Marshall, Humphreys, Hickman, Lewis & Perry, Wayne Counties   | N/A        | 1        |
| Amber Darter       | <u>Percina antosella</u>    | Tennessee: Polk & Bradley Counties<br>Georgia: Murray County   | N/A        | 1        |
| Tuscumbia Darter   | <u>Etheostoma tuscumbia</u> | Alabama: Lauderdale, Limestone, Madison & Colbert Counties   | N/A        | 1        |

| SCIENTIFIC NAME               | STATES/COUNTIES   | PETITIONER | PRIORITY |
|-------------------------------|---|------------|----------|
| <u>Etheostoma pallidiorum</u> | Arkansas: Montgomery & Garland Counties.  | N/A        | 1        |
| <u>Percina rex</u>            | Virginia: Montgomery, Roanoke, Sussex, Dinwiddie, Henry Franklin & Pittsylvania Counties            | N/A        | 1        |
| <u>Noturus gilberti</u>       | Virginia: Montgomery, Roanoke, Graig, Botetgurt, Patrick Counties<br>North Carolina: Stokes County. | N/A        | 1        |
| <u>Noturus sp.</u>            | Tennessee: Hickman, Humphreys & Hancock Counties.   | N/A        | 1        |
| <u>Noturus taylori</u>        | Arkansas: Clark, Montgomery, Pike Counties.   | N/A        | 1        |

| SPECIES LISTINGS<br>to be listed by 1979      |  | AMPHIBIANS AND REPTILES   |  |          |
|---|--|---|--|----------|
| C. NAME                                       | SCIENTIFIC NAME                        | STATES/COUNTIES   | PETITIONER                                       | PRIORITY |
| San Marcos salamander                         | <u>Bufo maculatus</u>                  | Ilwaco, Oregon  | N/A  | 5        |
| Valdina Farms salamander                      | <u>Bufo troglodytes</u>                | Medina, Texas   | N/A  | 1        |
| Black toad                                    | <u>Bufo eximius</u>                    | Inyo, California  | N/A  | 5        |
| Illinois mud turtle                           | <u>Kinosternon flavescens spooneri</u> | Louisiana, Muscatine, Iowa; Mason, Lake, Illinois; Mason, Missouri; historically known from Cass, Henderson, Lee, Whiteside, Illinois | N/A  | 2        |
| Key mud turtle                                | <u>Kinosternon bauri bauri</u>         | Monroe, Florida   | N/A  | 6        |
| Plymouth red-bellied turtle                   | <u>Chrysemys rubriventris bangsi</u>   | Plymouth, Dukes Massachusetts   | N/A  | 1        |
| Coachella Valley fringe-toed lizard           | <u>Uma inornata</u>                    | Riverside, California   | N/A  | 5        |
| Desert tortoise (Beaver Dam slope population) | <u>Gopherus agassizii</u>              | Washington, Utah  | Dr. Glenn Stewart of the Desert Tortoise Council | 2        |
| Flat-tailed horned lizard                     | <u>Phrynosoma m'calli</u>              | Imperial, Riverside, California   | N/A  | 3        |
| Monito gecko                                  | <u>Sphaerodactylus micropithecus</u>   | Monito Island, Puerto Rico  | N/A  | 1        |
| Virgin Islands boa                            | <u>Epicrates monensis granti</u>       | St. Thomas, U.S. Virgin Islands   | N/A  | 3        |

| SPECIES LISTINGS . . . to be listed by 1979 | AMPHIBIANS AND REPTILES | SCIENTIFIC NAME                     | STATES/COUNTIES   | PETITIONER | PRIORITY |
|---|-------------------------|-------------------------------------|---|------------|----------|
| C. . . NNE                                  |                         |                                     |   |            |          |
| Flattened musk turtle                       |                         | <u>Sternotherus minor depressus</u> | Winston, Cullman, Blount, Marshall,<br>Jefferson, Walker, Fayette, Lawrence,<br>Alabama | N/A        | 8        |
| Alabama red-bellied turtle                  |                         | <u>Chrysemys alabamensis</u>        | Mobile, Baldwin, Escambia, Monroe,<br>Washington, Clarke, Alabama                       | N/A        |          |

| SPECIES LISTINGS |      | SPECIES TO BE ADDED BY END OF FY 1979 |  | CLAIMS<br>STATES/COUNTIES  | PETITIONER | PRIORITY |
|------------------|------|---------------------------------------|--|--|------------|----------|
| CO.              | NAME | SCIENTIFIC NAME                       |  |  |            |          |
| N.A.             |      | <u>Pleurobema marshalli</u>           |  | Mississippi: Lowndes, Clay, Monroe<br>Alabama: Pickens, Greene, Sumter                             | N.A.       | 1        |
| N.A.             |      | <u>Pleurobema taitianum</u>           |  | Mississippi: Lowndes, Clay, Monroe<br>Alabama: Pickens, Greene, Sumter                             | N.A.       | 1        |
| Stirrup shell    |      | <u>Quadrula stapes</u>                |  | Mississippi: Lowndes, Clay, Monroe<br>Alabama: Pickens, Greene, Sumter                             | N.A.       | 1        |
| N.A.             |      | <u>Epioblasma penita</u>              |  | Mississippi: Lowndes, Clay, Monroe<br>Alabama: Pickens, Greene, Sumter                             | N.A.       | 1        |
| N.A.             |      | <u>Pleurobema curtum</u>              |  | Mississippi: Lowndes, Clay, Monroe<br>Alabama: Pickens, Greene, Sumter                             | N.A.       | 1        |
| N.A.             |      | <u>Pleurobema decusum</u>             |  | Mississippi: Lowndes, Clay, Monroe<br>Alabama: Pickens, Greene, Sumter, Bibb,<br>Shelby, Jefferson | N.A.       | 1        |
| N.A.             |      | <u>Epioblasma metastrata</u>          |  | Alabama: Bibb, Shelby, Jefferson   | N.A.       | 1        |

SPECIES LISTINGS -- Species which may be added by end of CY 1979

## CRUSTACEANS

| COMMON NAME                             | SCIENTIFIC NAME                   | STATES/COUNTIES  | PETITIONER    | PRIORITY |
|---|-----------------------------------|--|---------------|----------|
| Hay's Spring amphipod                   | <u>Stygonectes havi</u>           | District of Columbia   | J. Holsinger  | 1        |
| Big South Fork crayfish                 | <u>Cambarus bouchardi</u>         | KTY.: McCreary, TENN.: Scott   | R. Bouchard   | 5        |
| Chickamauga crayfish                    | <u>Cambarus extraneus</u>         | GA.: Catoosa, Walker, Whitfield, TENN.: Hamilton                               | R. Bouchard   | 5        |
| Obeys crayfish                          | <u>Cambarus obeyensis</u>         | TENN.: Cumberland, Fentress, Overton, Putnam.                                  | R. Bouchard   | 5        |
| Louisville crayfish                     | <u>Orconectes jeffersoni</u>      | KTY.: Bullitt, Jefferson, Oldham.  | R. Bouchard   | 5        |
| Nashville crayfish                      | <u>Orconectes shoupi</u>          | TENN.: Davidson, Williamson  | R. Bouchard   | 5        |
| Placid crayfish                         | <u>Pacifasticus fortis</u>        | CALIF.: Shasta   | J. Hedgespeth | 5        |
| Palm Springs Cave crayfish              | <u>Procambarus acherontis</u>     | FLA.: Seminole   | R. Franz      | 5        |
| Madison Cave isopod                     | <u>Antrolana lira</u>             | VA.: Augusta   | J. Holsinger  | 5        |
| Alabama cave shrimp                     | <u>Palaeomonias alabamae</u>      | ALA.: Madison  | J. Cooper     | 5        |
| Kentucky cave shrimp                    | <u>Palaeomonias ganteri</u>       | KTY.: Edmonson, Hart   | J. Cooper     | 5        |
| <del>Squirrel Chimney cave shrimp</del> | <u>Palaeomonetes cumingi</u>      | FLA.: Alachua  | R. Franz      | 5        |
| California freshwater shrimp            | <u>Syncaeris pacifica</u>         | CALIF.: Marin, Sonoma  | J. Hedgespeth | 5        |
| Kauai cave amphipod                     | <u>Spelaeorchestia koloana</u>    | HAW.: Kauai  | F. Howarth    | 5        |
| Valdina Farms isopod                    | <u>Caecidotea pila</u>            | TX.: Medina  | J. Holsinger  | 1        |
| Greensboro burrowing crayfish           | <u>Cambarus catagius</u>          | NCAR.: Guilford  | M. J. Cooper  | 5        |
| New River riffle crayfish               | <u>Cambarus chasmodactylus</u>    | NCAR.: Allegheny, Ashe, Catauga, W.: Carroll, Grayson, Kythe, WVA.: Pocahontas | M. J. Cooper  | 5        |
| Peedee lotic crayfish                   | <u>Procambarus lepidodactylus</u> | NCAR.: Columbus, SCAR.: Horry?   | M. J. Cooper  | 5        |

## SHELLS LISTING

Swals

| SN NAME                                     | SCIENTIFIC NAME                   | STATES/COUNTIES                     | PETITIONER | PRIORITY |
|---|-----------------------------------|-------------------------------------|------------|----------|
| Fraternal snail                             | <u>Micrarionta feralis</u>        | California: San Nicolas Island      | N.A.       | 1        |
| Rocky-coast snail                           | <u>Monadenia fidelis pronotus</u> | California: Del Norte               | N.A.       | 1        |
| Bristle snail                               | <u>Monadenia setosa</u>           | California: Trinity (Swede Creek)   | N.A.       | 1        |
| Cheatum's snail                             | <u>Tryonia cheatumi</u>           | Texas: Reeves                       | N.A.       | 1        |
| White River snail                           | <u>Tryonia clathrata</u>          | Nevada: Clark, Lincoln, Nye         | N.A.       | 1        |
| Karok Indian snail                          | <u>Vespericola karokorum</u>      | California: Humboldt                | N.A.       | 1        |
| Jones' middle-toothed land snail            | <u>Mesodon jonesianus</u>         | North Carolina: Swain               | N.A.       | 3        |
| Magazine mountain middle-toothed land snail | <u>Mesodon magazzinenses</u>      | Arkansas: Logan                     | N.A.       | 3        |
| Pilsbry's narrow apertured land snail       | <u>Stenotrema pilsbryi</u>        | Arkansas: Polk<br>Oklahoma: LeFlore | N.A.       | 3        |
| Strange many-whorled land snail             | <u>Polysyrma peregrina</u>        | Arkansas: Izard, Stone              | N.A.       | 3        |



SPECIES LISTINGS - Species which may be added by end of CY 1979

CHRISTIANUS

| LOCAL NAME                     | SCIENTIFIC NAME                   | DATES/COUNTIES | PETITIONER   | PRIORITY |
|--------------------------------|-----------------------------------|----------------|--------------|----------|
| Bigger's cave amphipod         | <u>Stygobromus biggersi</u>       | VA.: Frederick | J. Holsinger | 5        |
| Luray Caverns amphipod         | <u>Stygobromus pseudospinosus</u> | VA.: Page      | J. Holsinger | 5        |
| Madison Cave amphipod          | <u>Stygobromus stegerorum</u>     | VA.: Augusta   | J. Holsinger | 5        |
| Alleghany County cave amphipod | <u>Stygobromus hoffmani</u>       | VA.: Alleghany | J. Holsinger | 5        |
| James cave amphipod            | <u>Stygobromus abditus</u>        | VA.: Pulaski   | J. Holsinger | 5        |
| Rye Cove cave isopod           | <u>Lircaeus culveri</u>           | VA.: Scott     | J. Holsinger | 5        |

STATES LISTINGS - Species which may be added by end of CY 1979

INSECTS

| COMMON NAME                       | SCIENTIFIC NAME                               | STATES/COUNTIES  | PETITIONER          | PRIORITY |
|-----------------------------------|---|--|---------------------|----------|
| Dakota skipper butterfly          | <u>Ilesperia dacotae</u>                      | IOWA: Dickinson, Poweshieck, MUNN.: Clay, Cottonwood, Lac Qui Parle, Lincoln, Ottumail, Pipestone, Polk, Stearns, Swift, North Dakota: no locality, SNAK.: Brown, Day, Marshall.   | C.D. MacNeill       | 3        |
| Montane Parnass skipper butterfly | <u>Ilesperia parnass montana</u>              | COLO.: Douglas, Jefferson  | R.E. Stanford       | 4        |
| Callippe silverspot butterfly     | <u>Speyeria callippe callippe</u>             | CALIF.: Alameda, Napa, San Mateo   | State of California | 2        |
| Great Basin silverspot butterfly  | <u>Speyeria nokomis nokomis</u>               | COLO.: Mesa, Montrose  | J. Scott            | 2        |
| Blue-black silverspot butterfly   | <u>Speyeria nokomis nigrocaerulea</u>         | ARIZ.: Apache  | R. Holland          | 2        |
| Oregon silverspot butterfly       | <u>Speyeria zerene hippolyta</u>              | ORE.: Clatsop, Lane, Lincoln, Tillamook, WASH.: Pacific  | D. McCorkle         | 2        |
| Karner blue butterfly             | <u>Lycaeides melissa samuelis</u>             | IND.: Lagrange, Lake, Nabash, OHIO: Lucas, MASS.: Unknown, NICH.: Allegan, Lake, Monroe, Montcalm, Muskegon, Newago, Ottawa, Wayne, NEW HAMPSHIRE: Hillsboro, Merrimack, NY.: Albany, Genesee, Jefferson, Oneida, Saratoga, Warren, NISC.: Burnett, Portage (?), Eau Claire, PA.: Wayne. | P. Rittner          | 2        |
| San Francisco tree lupine moth    | <u>Grapholitha edwardsiana</u>                | CALIF.: San Mateo, San Francisco   | J.A. Powell         | 1        |
| Kern primrose sphinx moth         | <u>Euprosorpinus euterpe</u>                  | CALIF.: Kern   | C. Rame, P. Tuskes  | 1        |
| Palos Verdes blue butterfly       | <u>Glaucopsyche lygdamus palosverdesensis</u> | CALIF.: Los Angeles  | B. Perkins, State   | 2        |
| Boller's ground beetle            | <u>Agonum boller</u>                          | WASH.: King  | R. Carlson          | 1        |
| Sacramento anthicid beetle        | <u>Anthicus sacramento</u>                    | CALIF.: Sacramento, Solano   | D. Chandler         | 1        |
| Globose dune beetle               | <u>Coelus globosus</u>                        | CALIF.: Marin, Mendocino, Monterey, San Mateo, Sonoma, Ventura, San Diego  | J. Doyen            | 1        |

SPECIES LISTINGS - To be added by end of CY 1979

## INSECTS

| SN NAME                       | SCIENTIFIC NAME                     | DATES/COUNTIES                       | PETITIONER | PRIORITY |
|-------------------------------|-------------------------------------|--------------------------------------|------------|----------|
| Boharts' small blue butterfly | <u>Eizeeria speciosa bohartorum</u> | CALIF.: Mariposa, Tulare             | G. Shields | 8        |
| Henne's cucosma moth          | <u>Eucosma hennei</u>               | CALIF.: Los Angeles, San Luis Obispo | none       | 9        |
| Busck's gall moth             | <u>Carolella busckana</u>           | CALIF.: Los Angeles                  | none       | 11       |
| Anillinus ground beetle       | <u>Anillinus</u> sp.                | NOCAR.: Union                        | J. Cornell | 7        |
| Common's riffle beetle        | <u>Stenelmis gammoni</u>            | NOCAR.: Ashe                         | J. Cornell | 7        |
| Middlekauff's katydid         | <u>Idiostatus middlekauffi</u>      | CALIF.: Contra Costa                 | D. Rantz   | 1        |

## SPECIES LISTINGS - Species which may be added by end of CY 1979

## INSECTS

| COMMON NAME                           | SCIENTIFIC NAME                          | STATES/COUNTIES                                 | PETITIONER  | PRIORITY |
|---------------------------------------|--|---|-------------|----------|
| San Joaquin dune beetle               | <u>Cocelus gracilis</u>                  | CALIF.: Contra Costa, Kings, Fresno, San Benito | J. Ioyen    | 1        |
| Mojave rabbitbrush longhorn beetle    | <u>Crossidius mojavenis</u>              | CALIF.: Los Angeles                             | J. Chensak  | 5        |
| California elderberry longhorn beetle | <u>Desmocerus californicus dimorphus</u> | CALIF.: Sacramento, Solano, San Joaquin         | A. Shipiro  | 4        |
| Delta green ground beetle             | <u>Elaphrus viridis</u>                  | CALIF.: Solano                                  | F. Andrews  | 5        |
| Robinson's rain scarab beetle         | <u>Phobetus robinsoni</u>                | CALIF.: Orange, San Diego                       | R. Huff     | 5        |
| Andrew's dune scarab beetle           | <u>Pseudocotalpa andrewsi</u>            | CALIF.: Imperial                                | A. Hardy    | 5        |
| Giuliani's dune scarab beetle         | <u>Pseudocotalpa giulianii</u>           | NEV.: Nye                                       | A. Hardy    | 5        |
| Rude's longhorn beetle                | <u>Necydalis rufi</u>                    | CALIF.: San Luis Obispo                         | J. Chensak  | 1        |
| Gabb's tiger beetle                   | <u>Cicindela gabbii</u>                  | CALIF.: Orange, San Diego                       | J. Sheppard | 3        |
| Large aegialia scarab beetle          | <u>Aegialia magnifica</u>                | NEV.: Nye                                       | A. Hardy    | 5        |
| Crescent Dune aegialia scarab beetle  | <u>Aegialia cressonata</u>               | NEV.: Nye                                       | A. Hardy    | 5        |
| Hardy's aegialia scarab beetle        | <u>Aegialia hardyi</u>                   | NEV.: Churchill                                 | A. Hardy    | 9        |
| Ciervo aegialia scarab beetle         | <u>Aegialia concinna</u>                 | CALIF.: Fresno                                  | A. Hardy    | 1        |
| Columbia River tiger beetle           | <u>Cicindela columbica</u>               | IDA.: Idaho                                     | F. Beer     | 1        |
| Clayton's copper butterfly            | <u>Lycanena dorcas claytoni</u>          | ME.: Penobscot                                  | none        | 2        |
| Salt marsh skipper butterfly          | <u>Panoquina panoquinoides errans</u>    | CALIF.: San Diego, Santa Barbara, Ventura       | none        | 6        |
| Phores blue butterfly                 | <u>Icaricia icarioides phores</u>        | CALIF.: Marin                                   | none        | 6        |

## SPECIES LISTINGS

| CC. | NAME (family)                                | SCIENTIFIC NAME                                 | STATES/COUNTIES   | PETITIONER         | PRIORITY |
|-----|--|---|---|--------------------|----------|
|     | Enchled Arrowhead (Alismataceae)             | <u>Sagittaria fusciculata</u>                   | North Carolina/Buncombe, Henderson<br>South Carolina/Greenville                 | Smithsonian report | 1        |
|     | <u>Paupaw</u> (Annonaceae)                   | <u>Asimina tetramera</u>                        | Florida/Martin, Palm Beach  | Smithsonian report | 7        |
|     | Greenman's Dropwort (Apiaceae)               | <u>Oxypolis greenmanii</u>                      | Florida/Bay, Calhoun, Gulf  | Smithsonian report | 9        |
|     | Tennessee Purple Cone Flower<br>(Asteraceae) | <u>Echinacea tennesseensis</u>                  | Tennessee/Rutherford, Davidson, Wilson  | Smithsonian report | 7        |
|     | (No common name) (Asteraceae)                | <u>Jamesianthus alabamensis</u>                 | Alabama/Colbert, Franklin   | Smithsonian report | 7        |
|     | Ruth's Telegraph plant (Asteraceae)          | <u>Heterotheca ruthii</u>                       | Tennessee/Polk  | Smithsonian report | 7        |
|     | (No common name) (Cyperaceae)                | <u>Fimbristylis perpusilla</u>                  | Georgia/Sumter, Seminole  | Smithsonian report | 7        |
|     | <del>Walt's Pixie Moss</del> (Diplensiaceae) | <u>Pyxidanthra brevifolia</u>                   | North Carolina/Ware, Hoke, Brunswick<br>South Carolina/Chesterfield, Darlington | Smithsonian report | 3        |
|     | Chapman Rhododendron (Ericaceae)             | <u>Rhododendron minus</u> var. <u>chapmanii</u> | Florida/Clay, Liberty, Gadsden, Franklin<br>Gulf, Leon                          | Smithsonian report | 7        |
|     | Gentian (Gentianaceae)                       | <u>Gentiana pennelliana</u>                     | Florida/Wakulla, Liberty, Gadsden,<br>Franklin, Gulf, Bay, Walton               | Smithsonian report | 7        |
|     | (No common name) (Lamiaceae)                 | <u>Conradina verticillata</u>                   | Kentucky/McCreary<br>Tennessee/Fentress, Morgan                                 | Smithsonian report | 7        |

## SPECIES LISTINGS

We anticipate listing during 1978-1979

C. A. NUNE

| SPECIES LISTINGS                                |                               | PLANTS (cont.)  |                    | Regions 3, 4, and 5 |  | P. 2 c   |  |
|---|-------------------------------|---|--------------------|---------------------|--|----------|--|
| we anticipate listing during 1978-1979          |                               | STATES/COUNTIES   |                    | PETITIONER          |  | PRIORITY |  |
| SCIENTIFIC NAME                                 |                               |   |                    |                     |  |          |  |
| White birds-in-a-nest (Lamiaceae)               | <u>Machiridea alba</u>        | Florida/Bay, Gulf, Franklin   | Smithsonian report | 7                   |  |          |  |
| Mountain golden heather (Cistaceae)             | <u>Hudsonia montana</u>       | North Carolina/Burke  | Smithsonian report | 5                   |  |          |  |
| Alabama canebrake pitcher plant (Sarraceniacae) | <u>Sarracenia alabamensis</u> | Alabama/Baldwin, Escambia, Washington,  | Smithsonian report | 7                   |  |          |  |
| Green pitcher plant (Sarraceniacae)             | <u>Sarracenia oreophila</u>   | Alabama/Elmore, Cherokee, DeKalb, Jackson<br>Georgia/Taylor, Troup, Chatooga<br>Tennessee/Fentress  | Smithsonian report | 7                   |  |          |  |
| Florida Gooseberry (Saxifragaceae)              | <u>Ribes echinellum</u>       | Florida/Jefferson<br>South Carolina/McCormick   | Smithsonian report | 9                   |  |          |  |
| False pimpernel (Scrophulariaceae)              | <u>Lindernia saxicola</u>     | Georgia/Rabun<br>North Carolina/Cherokee  | Smithsonian report | 3                   |  |          |  |
| Gray's Lily (Liliaceae)                         | <u>Lilium grayii</u>          | North Carolina/Ashe, Avery, Watauga,<br>Mitchell, Alleghany<br>Tennessee/Johnson, Carter<br>Virginia/Roanoke, Bedford<br>Maryland/Frederick | Smithsonian report | 7                   |  |          |  |
| Harper's Beauty (Liliaceae)                     | <u>Harporocallis flava</u>    | Florida/Franklin, Liberty   | Smithsonian report | 1                   |  |          |  |
| Panhandle Lily (Liliaceae)                      | <u>Lilium iridollae</u>       | Alabama/Baldwin, Escambia, Covington<br>Florida/Escambia, Santa Rosa, Okaloosa,<br>Walton, Leon   | Smithsonian report | 7                   |  |          |  |

## SPECIES LISTINGS

Species to be anticipated listing during 1978-1979

| CO. NAME (family)              | SCIENTIFIC NAME                                   | STATES/COUNTIES  | PETITIONER         | PRIORITY |
|--------------------------------|---|--|--------------------|----------|
| Sunnybell (Liliaceae)          | <u>Schoenolirion texanum</u>                      | Texas/Austin, Brazos, Walker<br>Arkansas/ (information<br>Alabama/ not<br>available) | Smithsonian        | 7        |
| Meadow beauty (Melastomaceae)  | <u>Rhexia parviflora</u>                          | Florida/Franklin   | Smithsonian report | 7        |
| Wild Columbine (Ranunculaceae) | <u>Aquilegia canadensis</u> var. <u>australis</u> | Florida/Jackson<br>Georgia/(information not available)                               | Smithsonian report | 11       |
| Spreading avens (Rosaceae)     | <u>Gum radiatum</u>                               | North Carolina/Ashe, Avery, Caldwell,<br>Mitchell, Yancey, Burke, Buncombe, Watauga  | Smithsonian report | 9        |
| Florida Yew (Taxaceae)         | <u>Taxus floridana</u>                            | Florida/Liberty, Gadsden   | Smithsonian report | 11       |
| Florida torreya (Taxaceae)     | <u>Torreya taxifolia</u>                          | Florida/Gadsden, Liberty, Jackson<br>Georgia/Decatur                                 | Smithsonian report | 3        |

Contracts presently outstanding and planned for Region 4 and Region 5 should provide information necessary for listing on approximately 200 plant species by the end of 1979. Many of these species may be listed during 1978-1979 which are not listed here. Since the information is not currently available, it is impossible to speculate on which species will warrant listing at this time.

Contracts presently outstanding and planned for Region 4 and Region 5 should provide information necessary for listing on approximately 200 plant species by the end of 1979. Many of these species may be listed during 1978-1979 which are not listed here. Since the information is not currently available, it is impossible to speculate on which species will warrant listing at this time.

SPECIES LISTINGS - To be added by end of CY 1979

COMMON SPONGES AND OTHER FORMS

| COMMON NAME                       | SCIENTIFIC NAME                | STATES/COUNTIES | PETITIONER   | PRIORITY |
|-----------------------------------|--------------------------------|-----------------|--------------|----------|
| Kauai cave wolf spider            | <u>Adicosa anops</u>           | HAW.: Kauai     | F. Howarth   | 1        |
| Biggor's groundwater planarian    | <u>Sphalloplana subtilis</u>   | VA.: Fairfax    | J. Holsinger | 1        |
| Holsinger's groundwater planarian | <u>Sphalloplana holsingeri</u> | VA.: Fairfax    | J. Holsinger | 1        |
| Rockbridge County cave planarian  | <u>Sphalloplana virginiana</u> | VA.: Rockbridge | J. Holsinger | 1        |





| NAME                           | SCIENTIFIC NAME  | STATES/COUNTIES                                      | PETITIONER  | PRIORITY |
|--------------------------------|--|--|-------------|----------|
| Nāui rēmya                     | <i>Remya mauitensis</i>                                  | HI/Hawaii  | Smithsonian | 3        |
| Dwarf iliau                    | <i>Wilkesia hobbii</i>                                   | HI/Kauai   | do          | 1        |
| San Francisco allocarya        | <i>Plagiobothrys diffusus</i>                            | CA/San Francisco                                     | do          | 1        |
| McDonald rockcress             | <i>Arabis macdonaldiana</i>                              | CA/Mendocino   | do          | 1        |
|                                | <i>Lepidium serra</i>                                    | HI/Kauai   | do          | 7        |
| Tiburon jewelflower            | <i>Streptanthus niger</i>                                | CA/Marin   | do          | 5        |
|                                | <i>Legenore limosa</i>                                   | CA/Solano, Stanislaus, Lake, San Mateo, Sonoma, Napa | do          | 11       |
| Pua pilo                       | <i>Capparis sandwichiana</i><br>var. <i>sandwichiana</i> | HI/Honolulu  | do          | 1        |
| Santa Cruz cypress             | <i>Cupressus goveniana</i><br>var. <i>abramsiana</i>     | CA/Santa Cruz, San Mateo                             | do          | 8        |
| Mehamehane                     | <i>Drypetes phyllanthoides</i>                           | HI/Kauai, Honolulu, Maui, Hawaii                     | do          | 3        |
|                                | <i>Euphorbia haelealeana</i>                             | HI/Kauai   | do          | 5        |
| Uhiuhi                         | <i>Mezoneuron kavaense</i>                               | HI/Hawaii, Oahu, <u>Kauai</u>                        | do          | 7        |
| Red-flowered Hawaiian geranium | <i>Geranium arboreum</i>                                 | HI/Mauai   | do          | 5        |

## PLANTS -- CALIFORNIA AND HAWAII

EXPECTED 1978-1979

## SPECIES LISTINGS

| COMMON                          | SCIENTIFIC NAME                                  | S/COUNTIES                | PETITIONER  | PRIORITY |
|---------------------------------|--|---------------------------|-------------|----------|
| Catalina mountain-mahogany      | Cercocarpus Traskiae                             | CA/ Los Angeles           | Smithsonian |          |
| Nanu                            | Gardenia brighamii                               | HI/Honolulu, Maui, Hawaii | do          | 3        |
| Na Pali beach hedyotis          | Hedyotis st.-johnii                              | HI/Kauai                  | Smithsonian | 3        |
| Pittkin Marsh indian paintbrush | Castilleja uliginosa                             | CA/Sonoma                 | do          | 1        |
| Holson nightshade               | Solanum nelsonii                                 | HI/Kauai, Maui, Hawaii    | do          | 8        |
| Raven manzanita                 | Arctostaphylos hookeri ssp. ravenii              | CA/San Francisco          | do          | 1        |
| Eureka valley dedeckera         | Dedeckera eurekaensis                            | CA/Inyo                   | do          | 7        |
| Tiburon buckwheat               | Eriogonum caninum                                | CA/Marin                  | do          | 5        |
| Big Island maolao               | Nerandria ovata                                  | HI/Hawaii                 | do          | 1        |
|                                 | Tetramolopium consanguineum<br>var. leptophyllum | HI/Hawaii                 | do          | 2        |
| Ilimakole                       | Portulaca sclerocarpa                            | HI/Maui, Hawaii           | do          | 5        |
| Nehe unnamed                    | Lipochaete venosa                                | HI/Hawaii                 | do          | 1        |
| H                               |  |                           |             |          |

## STATES/COUNTIES

## SCIENTIFIC NAME

## PETITIO-IR

## PRIORITY

|                                    |  |   |             |   |
|------------------------------------|--|---|-------------|---|
| Presidio clarkia                   | Clarkia franciscana                      | CA/San Francisco  | Smithsonian | 1 |
| Colusa grass                       | Neostapfia colusana                      | CA/Colusa, Solano, Stanislaus                                   | do          | 7 |
| California Orcutt grass            | Orcuttia californica<br>var. californica | CA/Los Angeles, Riverside, San Diego;<br>Mexico/Baja California | do          | 4 |
| San Joaquin valley Orcutt<br>grass | Orcuttia californica var.<br>inaequalis  | CA/Stanislaus, Tulare, Fresno                                   | do          | 8 |
| Sacramento Orcutt grass            | Orcuttia californica var. viscidula      | CA/Sacramento   | do          | 8 |
| Crampton Orcutt grass              | Orcuttia mucronata                       | CA/Solano   | do          | 1 |
| Pilose Orcutt grass                | Orcuttia pilosa                          | CA/Stanislaus, Merced, Madera, Tehama                           | do          | 7 |
| Slender Orcutt grass               | Orcuttia tenuis                          | CA/Shasta, Tehama, Lake   | do          | 7 |
| Carter panic grass                 | Panicum carteri                          | HI/Honolulu   | do          | 1 |
| Ione wild buckwheat                | Eriogonum apricum var. apricum           | CA/Amador   | do          | 2 |
| Irish Hill wild buckwheat          | Eriogonum apricum var. prostratum        | CA/Amador   | do          | 2 |
| Mouse buckwheat                    | Eriogonum nudum var. murinum             | CA/Tulare   | do          | 8 |
| Pendent kihi fern                  | Adiantum perianth                        | HI/Kauai, Honolulu, Maui, Hawaii                                | do          | 1 |

## STATES/COUNTIES

## SCIENTIFIC NAME

## PRIORITY

## PETITIONER

| NAME                        | SCIENTIFIC NAME                  | STATES/COUNTIES                  | PETITIONER  | PRIORITY |
|-----------------------------|----------------------------------|----------------------------------|-------------|----------|
| Dwarf naupaka               | Scaevola coriacea                | HI/Kauai, Oahu, Maui, Hawaii     | Smithsonian | 1        |
| San Diego pogogyne          | Pogogyne abramsii                | CA/San Diego                     | do          | 1        |
| Indian Valley brodiaea      | Brodiaea coronaria<br>var. rosea | CA/Lake                          | do          | 2        |
| Tiburon mariposa            | Calochortus tiburonensis         | CA/Marin                         | do          | 5        |
| Baker's meadowfoam          | Limnanthes bakeri                | CA/Mendocino                     | do          | 1        |
| Sebastopol meadowfoam       | Limnanthes vinculans             | CA/Sonoma                        | do          | 7        |
| Hawaiian cotton             | Gossypium tomentosum             | HI/Kauai, Honolulu, Maui, Hawaii | do          | 7        |
| Kauai hau kuauiwi           | Hibiscadelphus distans           | HI/Kauai                         | do          | 1        |
| Kilauea hau kuauiwi         | Hibiscadelphus giffardianus      | HI/Hawaii                        | do          | 1        |
| Hualalai hau kuauiwi        | Hibiscadelphus hualalaiensis     | HI/Hawaii                        | do          | 1        |
| Cooke kokio                 | Kokia cookii                     | HI/Maui                          | Smithsonian | 1        |
| Hau-hele ula                | Kokia drynarioides               | HI/Hawaii                        | do          | 5        |
| Kauai kokio                 | Kokia kauaiensis                 | HI/Kauai                         | do          | 7        |
| Owens Valley checker-mallow | Sidalcea corillei                | CA/Inyo                          | do          | 3        |

Page 6 of 7

PLANTS -- CALIFORNIA AND HAWAII

EXPECTED 1978-1979

SPECIES LISTINGS

| CONVO. | SCIENTIFIC NAME                                | S/COUNTIES | PETITIONER  | PRIORITY |
|--------|--|------------|-------------|----------|
|        | Haplostachys haplostachya<br>var. angustifolia | HI/Hawaii  | Smithsonian | 2        |
|        | Stenogyne angustifolia<br>var. angustifolia    | HI/Hawaii  | do          | 2        |

| PLANT LISTINGS                                      | EXPECTED 1978-1979                     | PLANTS -- CALIFORNIA AND HAWAII | Page 7 of 7                        | PRIORITY |
|---|--|---------------------------------|------------------------------------|----------|
| COMMON NAME   | SCIENTIFIC NAME                        | STATE/COUNTIES                  | PETITIONER                         | PRIORITY |
| Stebbins lewisia<br>San Benito evening-<br>primrose | Achyranthes splendens var. rotundata   | HI/ Honolulu                    | Smithsonian                        | 4        |
|   | Euphorbia skottsbergii var. kalaeloana | HI/ Honolulu                    | do                                 | 4        |
|   | Lewisia stebbinsi                      | CA/ Mendocino                   | none                               | 1        |
|   | Camissonia benitensis                  | CA/ San Benito                  | California Native Plant<br>Society | 1        |

| SPECIES LISTINGS          | Region 1 (except Hawaii and most of California),<br>Region 2, Region 4<br>(Puerto Rico and Virgin Islands only), and Region 6 | Plants (anticipated through 1979) in part | SCIENTIFIC NAME   | STATES/COUNTIES                                   | PETITIONER                    | PRIORITY |
|---------------------------|---|---|---|---|-------------------------------|----------|
| a. <i>Placelia</i>        |   |   | <u><i>Placelia argillacea</i></u>                               | Utah (Utah Co.)                                   | Smithsonian                   | 1        |
| Valleur wire-lettuce      |   |   | <u><i>Stephanomeria malheurensis</i></u>                        | Oregon (Harney Co.)                               | Smithsonian and Dr. L. B. ... | 5        |
| Ash Meadows stickleaf     |   |   | <u><i>Montezelia leucophylla</i></u>                            | Nevada (Nye Co.)                                  | Smithsonian                   | 1        |
| Ash Meadows milk-vetch    |   |   | <u><i>Astragalus phoenix</i></u>                                | Nevada (Nye Co.)                                  | Smithsonian                   | 1        |
| Amargosa niterwort        |   |   | <u><i>Nitrophila mohavensis</i></u>                             | California (Inyo Co.)                             | Smithsonian                   | 1        |
| a cactus                  |   |   | <u><i>Sclerocactus glaucus</i></u>                              | Colorado (Delta and Mesa Cos.); Utah (Uintah Co.) | Smithsonian                   | 1        |
| spineless hedgehog cactus |   |   | <u><i>Echinocereus triglochidiatus</i> var. <i>incertus</i></u> | Colorado (Montrose, Delta, Mesa, and Ouray Cos.)  | Smithsonian                   | 1        |
| dinosaur milk-vetch       |   |   | <u><i>Astragalus saurinus</i></u>                               | Utah (Uintah Co.)                                 | Smithsonian                   | 5        |



Plants in part (R 1pp, 2, 4pp, 6)

| SPECIES LISTINGS        | COMMON NAME            | SCIENTIFIC NAME               | STATES/COUNTIES   | PETITIONER  | PRIORITY |
|-------------------------|------------------------|-------------------------------|---|-------------|----------|
| Laramie false sagebrush | large-fruit bladderpod | <u>Sphaeromeria simplex</u>   | Wyoming (Albany Co.)  | Smithsonian | 1        |
| Howell's gumweed        | Nead's milkweed        | <u>Lesquerella macrocarpa</u> | Wyoming (Sweetwater Co.)  | Smithsonian | 1        |
|                         |                        | <u>Grindelia howellii</u>     | Montana (Powell and Missoula Cos.); possibly Idaho (Benewah Co.)  | Smithsonian | 5        |
|                         |                        | <u>Asclepias meadii</u>       | Illinois (Saline and Ford Cos.); Missouri (Vernon and St. Clair Cos.); Kansas (Anderson, Bourbon, Coffey, Douglas, Franklin, Jefferson, Leavenworth and Miami Cos.); historically elsewhere in Illinois and Missouri, and in Iowa, Indiana and Wisconsin, but not recently relocated. | Smithsonian | 3        |

## SPECIES LISTINGS

Plants in part (R lpp. 2, 4pp, 6)

(C. NAME

| SCIENTIFIC NAME                               | STATES/COUNTIES                             | PETITIONER  | PRIORITY |
|---|---|---|----------|
| <u>Helianthus argillaceus</u>                 | Utah (Uintah Co.)                           | Dr. N. D. Atwood                                      | 1        |
| <u>Glaucocharum suffrutescens</u>             | Utah (Uintah Co.)                           | Smithsonian   | 1        |
| <u>Cryptantha barnebyi</u>                    | Utah (Uintah Co.)                           | Smithsonian   | 1        |
| <u>Arctostaphylos humilis</u>                 | Utah (Washington Co.); Arizona (Mohave Co.) | Smithsonian   | 1        |
| <u>Cycladenia humilis</u> var. <u>jonesii</u> | Utah (Grand and possibly still Emery Cos.)  | Smithsonian   | 2        |
| <u>Astragalus iselyi</u>                      | Utah (Grand and San Juan Cos.)              | Drs. S. L. Welsh,<br>N. D. Atwood and<br>J. L. Reveal | 1        |
| <u>Astragalus montii</u>                      | Utah (San Pete Co.)                         | Dr. N. D. Atwood                                      | 5        |

Plants in part (R 1pp, 2, 4pp, 6)

## SPECIES LISTINGS

| CL. NAME                  | SCIENTIFIC NAME               | STATES/COUNTIES                            | PETITIONER                       | PRIORITY |
|---------------------------|-------------------------------|--|----------------------------------|----------|
| a death-camas             | <u>Zigadenus vaginatus</u>    | Utah (Grand, Kane and San Juan Cos.)       | Drs. Welsh, Atwood and<br>Reveal | 9        |
| Graham's beardtongue      | <u>Pentstemon grahamii</u>    | Utah (Uintah Co.)                          | Smithsonian                      | 9        |
| Harrison's milk-vetch     | <u>Uragulus harrisonii</u>    | Utah (Wayne Co.)                           | Smithsonian                      | 3        |
| Johnston's cat's-eye      | <u>Cryptantha johnstonii</u>  | Utah (Emery Co.)                           | Smithsonian                      | 3        |
| a fleabane                | <u>Erigeron kachinensis</u>   | Utah (San Juan Co.)                        | Smithsonian                      | 1        |
| Garrett's beardtongue     | <u>Pentstemon garrettii</u>   | Utah (Duchesne and Wasatch Cos.)           | Drs. Welsh, Atwood and<br>Reveal | 5        |
| Utah phacelia             | <u>Phacelia indecora</u>      | Utah (Wayne and San Juan Cos.)             | Smithsonian                      | 7        |
| Barneby's scarf-peg       | <u>Psoralea pipsilla</u>      | Utah (Kane Co.) and Arizona (Coconino Co.) | Smithsonian                      | 3        |
| Wright's fish-hook cactus | <u>Sclerocactus wrightiae</u> | Utah (Emery and Wayne Cos.)                | Smithsonian                      | 7        |

Plants in part (R lpp, 2, 4pp, 6)

SPECIES LISTINGS

| <u>COMMON NAME</u>           | <u>SCIENTIFIC NAME</u>         | <u>STATES/COUNTIES</u>                   | <u>PETITIONER</u> | <u>PRIORITY</u> |
|------------------------------|--------------------------------|--|-------------------|-----------------|
| Intermountain Townsend-daisy | <u>Townsendia aprica</u>       | Utah (Sevier Co.)                        | Smithsonian       | 1               |
| Davis stickseed              | <u>Dasynotus dahuensis</u>     | Idaho (Idaho Co.)                        | Smithsonian       | 3               |
| Jaeger's thelypody           | <u>Heckelia davisii</u>        | Idaho (Lemhi Co.)                        | Smithsonian       | 3               |
| Indian Valley sedge          | <u>Thelypodium repandum</u>    | Idaho (Custer Co.)                       | Smithsonian       | 7               |
|                              | <u>Carex aboriginum</u>        | Idaho (Adams Co.)                        | Smithsonian       | 7               |
|                              | <u>Astragalus annis-omissi</u> | Idaho (Custer Co.)                       | Smithsonian       | 5               |
| Anise onion                  | <u>Allium anisum</u>           | Idaho (Ada, Gem, possibly Elmore Cos.)   | Smithsonian       | 3               |
| smooth stickleaf             | <u>Mentzelia mollis</u>        | Idaho (Owyhee Co.); Oregon (Malheur Co.) | Smithsonian       | 3               |
| Clearwater phlox             | <u>Phlox idahoensis</u>        | Idaho (Clearwater Co.)                   | Smithsonian       | 1               |
| Christ's Indian painbrush    | <u>Castilleja christii</u>     | Idaho (Cassia Co.)                       | Smithsonian       | 7               |

## SPECIES LISTINGS

Plants in part (R lpp. 2, 4pp. 6)

| C. NAME              | SCIENTIFIC NAME                                 | STATES/COUNTIES  | PETITIONER  | PRIORITY |
|----------------------|---|--|-------------|----------|
| Porter groundsel     | <u><i>Sonchella porteri</i></u>                 | Colorado (Gunnison and Pitkin Cos.)                                  | Smithsonian | 3        |
| a cat's-eye          | <u><i>Cryptantha aperta</i></u>                 | Colorado (Nesha Co.)   | Smithsonian | 3        |
| a rockcress          | <u><i>Arabis gunnisoniana</i></u>               | Colorado (Gunnison and Montrose Cos.)                                | Smithsonian | 7        |
|                      | <u><i>Braya humilis</i> ssp. <i>ventosa</i></u> | Colorado (Park Co.)  | Smithsonian | 2        |
|                      | <u><i>Eutrema penlandii</i></u>                 | Colorado (Summit, Lake and Park Cos.)                                | Smithsonian | 7        |
| a bladderpod         | <u><i>Lesquerella pruinosa</i></u>              | Colorado (Archuleta Co.)   | Smithsonian | 1        |
| Nesha Verde cactus   | <u><i>Sclerocactus mesae-verdae</i></u>         | Colorado (Montezuma and Montrose Cos.);<br>New Mexico (San Juan Co.) | Smithsonian | 3        |
| Osterhout milk-vetch | <u><i>Astragalus osterhoutii</i></u>            | Colorado (Grand Co.)   | Smithsonian | 7        |

RECEIVED IN PART (N 1111) 11-11-11 (U)

| COM. NAME                    | SCIENTIFIC NAME                | STATES/COUNTIES  | PETITIONER  | PRIORITY |
|------------------------------|--------------------------------|--|-------------|----------|
| Schmall milk-vetch           | <u>Astragalus schmallae</u>    | Colorado (Montezuma Co.)                                     | Smithsonian | 7        |
| a beardtongue                | <u>Phacelia submontana</u>     | Colorado (Mesa Co.)  | Smithsonian | 3        |
|                              | <u>Penstemon retrofractus</u>  | Colorado (Montrose Co.)                                      | Smithsonian | 3        |
|                              | <u>Psoralea kingii</u>         | Nevada (Humboldt and possibly Churchill Cos.)                | Smithsonian | 3        |
| Beatley milk-vetch           | <u>Astragalus beatleyae</u>    | Nevada (Nye Co.)   | Smithsonian | 1        |
| Hitchcock's peavine          | <u>Lathyrus hitchcockianus</u> | Nevada (Nye Co.) and California (Inyo Co.)                   | Smithsonian | 7        |
| Beatley phacelia             | <u>Phacelia beatleyae</u>      | Nevada (Nye Co.)   | Smithsonian | 7        |
| an Indian paintbrush         | <u>Castilleja sanguinea</u>    | Nevada (White Pine Co.)                                      | Smithsonian | 1        |
| gypsum-loving wild-buckwheat | <u>Eriogonum gypsophilum</u>   | New Mexico (Eddy Co.)  | Smithsonian | 5        |
| Knowlton hedgehog cactus     | <u>Pediocactus knowltonii</u>  | New Mexico (San Juan Co.); possibly Colorado (Archuleta Co.) | Smithsonian | 1        |

Plants in part (R 1pp, 2, 4pp, 6)

## PLANT LISTINGS

| LC. AVE                    | SCIENTIFIC NAME  | STATES/COUNTIES                              | PETITIONER  | PRIORITY |
|----------------------------|--|--|-------------|----------|
| a corycactus               | <u>Coryphantha sneedii</u> var. <u>leei</u>              | New Mexico (Eddy Co.)                        | Smithsonian | 2 -      |
| Sneed's corycactus         | <u>Coryphantha sneedii</u> var. <u>sneedii</u>           | New Mexico (Otero Co.); Texas (Hudspeth Co.) | Smithsonian | 2        |
| Kuenzler's hedgehog cactus | <u>Echinocereus kuenzleri</u>                            | New Mexico (Otero Co.)                       | Smithsonian | 1        |
| Thompson clover            | <u>Trifolium thompsonii</u>                              | Washington (Chelan Co.)                      | Smithsonian | 1        |
| Flett's violet             | <u>Viola flettii</u>                                     | Washington (Clallam and Jefferson Cos.)      | Smithsonian | 1        |
| Olympic harebell           | <u>Campanula piperi</u>                                  | Washington (Clallam and Jefferson Cos.)      | Smithsonian | 1        |
| a larkspur                 | <u>Dolophinium nuttallianum</u> var. <u>lincapetalum</u> | Washington (Chelan Co.)                      | Smithsonian | 2        |
| a larkspur                 | <u>Dolophinium multiplex</u>                             | Washington (Chelan Co.)                      | Smithsonian | 1        |
| northwestern larkspur      | <u>Dolophinium xantholeucum</u>                          | Washington (Okanogan and Cleland Cos.)       | Smithsonian | 1        |
| Kenatchee larkspur         | <u>Dolophinium viridescens</u>                           | Washington (Chelan and Kittitas Cos.)        | Smithsonian | 1        |

Plants in part (R pp, 2, App, 6)

## SPECIES LISTINGS

| NAME                       | SCIENTIFIC NAME                                     | STATES/COUNTIES                          | PETITIONER                       | PRIORITY |
|----------------------------|---|--|----------------------------------|----------|
| White milk-vetch           | <u>Astragalus sinuatus</u>                          | Washington (Kittitas and Grant dist)     | Smithsonian                      | 3        |
| Cascade head catchfly      | <u>Silene douglasii</u> var. <u>oraria</u>          | Oregon (Tillamook Co.)                   | Smithsonian                      | 2        |
| Macfarlane four-o'clock    | <u>Mirabilis macfarlanei</u>                        | Oregon (Wallowa Co.)                     | Smithsonian                      | 1        |
| German aster               | <u>Aster gormanii</u>                               | Oregon (Jefferson, Marion and Linn Cos.) | Smithsonian                      | 3        |
| Kohler's rock cress        | <u>Arabis kohleri</u> var. <u>kohleri</u>           | Oregon (Douglas Co.)                     | Smithsonian                      | 2        |
| Curtus aster               | <u>Aster curtus</u>                                 | Oregon (Lane Co.)                        | Smithsonian                      | 1        |
| Bradshaw desert-parsley    | <u>Lomatium bradshawii</u>                          | Oregon (Benton and possibly Lane Cos.)   | Smithsonian                      | 1        |
| Diamond Lake mission-bells | <u>Fritillaria adamantina</u>                       | Oregon (Douglas Co.)                     | Smithsonian                      | 1        |
| Leichtlin camassia         | <u>Camassia leichtlinii</u> var. <u>leichtlinii</u> | Oregon (Douglas Co.)                     | Smithsonian                      | 1        |
|                            |   |  | Jean Siddall (Oregon Task Force) | 2        |



Plants in part (R 1pp, 2, 4pp, 6)

10

## PLANT LISTINGS

| PL NAME                           | SCIENTIFIC NAME                                     | STATES/COUNTIES   | PETITIONER                       | PRIORITY |
|-----------------------------------|---|---|----------------------------------|----------|
| Peck's long-bearded mariposa-lily | <u>Calochortus longebarbatus</u> var. <u>peckii</u> | Oregon (Crook Co.)  | Smithsonian                      | 2        |
| Packard's stickleaf               | <u>Sedum radiatum</u> ssp. <u>dopauperatum</u>      | Oregon (Jackson Co.)  | Smithsonian                      | 4        |
| Grimes ivesia                     | <u>Nentzolia packardiae</u>                         | Oregon (Malheur Co.)  | Jean Siddall (Oregon Task Force) | 1        |
| Errett's ragwort                  | <u>Ivesia rhyphar</u>                               | Oregon (Malheur Co.)  | Jean Siddall (Oregon Task Force) | 1        |
| Owyhee clover                     | <u>Senecio erretiae</u>                             | Oregon (Malheur Co.)  | Jean Siddall (Oregon Task Force) | 1        |
| Crater Lake grape fern            | <u>Trifolium owyheense</u>                          | Oregon (Malheur Co.)  | Jean Siddall (Oregon Task Force) | 1        |
| California pitcher-plant          | <u>Botrychium pumicola</u>                          | Oregon (Klamath and possibly Deschutes Cos.)  | Jean Siddall (Oregon Task Force) | 3        |
|                                   | <u>Darlingtonia californica</u>                     | Oregon (Lincoln, Lane, Coos, Curry and Josephine Cos.); California (Del Norte, Trinity, Siskiyou, Plumas and Nevada Cos.) | Jean Siddall (Oregon Task Force) | 7        |

## Plants in part (R pp. 2, 4pp. 6)

## SPECIES LISTINGS

| COL. NAME                        | SCIENTIFIC NAME                                     | ITIES/COUNTIES   | PETITIONER                         |
|----------------------------------|---|--|------------------------------------|
| seaside fields                   | <u>Anemone oregona</u> var. <u>felix</u>            | Oregon (Lincoln Co.); Washington (possibly Grays Harbor Co.)   | Jean Siddall (Oregon Task Force) 8 |
|                                  | <u>Cordylanthus maritimus</u> ssp. <u>palustris</u> | Oregon (Tillamook and Coos Cos.)   | Smithsonian 2                      |
|                                  | <u>Lasthenia minor</u> ssp. <u>maritima</u>         | Oregon (Lincoln Co.); California (Del Norte, Humboldt and San Francisco Cos.); Canada (British Columbia) | Smithsonian 7                      |
| large-flowered woolly meadowfoam | <u>Limnanthes floccosa</u> ssp. <u>grandiflora</u>  | Oregon (Jackson Co.)   | Smithsonian 2                      |
| dwarf woolly meadowfoam          | <u>Limnanthes floccosa</u> ssp. <u>pumila</u>       | Oregon (Jackson Co.)   | Smithsonian 6                      |
| Howell's fleabane                | <u>Erigeron howellii</u>                            | Oregon (Multnomah Co.)   | Smithsonian 5                      |

## PLANT LISTINGS

Plants in part (R 1pp, 2, 4pp, 6)

| NAME                         | SCIENTIFIC NAME              | DATES/COUNTIES  | PETITIONER  | PRIORITY |
|------------------------------|------------------------------|---|-------------|----------|
| Oregon fleabane              | <u>Erigeron oregonus</u>     | Oregon (Multnomah Co.); Washington (Skamania Co.)           | Smithsonian | 5 -      |
| Upupa green gentian          | <u>Frasera unguiculata</u>   | Oregon (Jackson and Douglas Cos.); California (Trinity Co.) | Smithsonian | 7        |
| Gentner mission-bells        | <u>Fritillaria gentneri</u>  | Oregon (Jackson and Josephine Cos.)                         | Smithsonian | 3        |
| bristle-flowered collomia    | <u>Collomia macrocalyx</u>   | Oregon (Gilliam, Crook and possibly Nathur Cos.)            | Smithsonian | 3        |
| Oregon bensoniella           | <u>Bensoniella oregana</u>   | Oregon (Curry Co.)  | Smithsonian | 5        |
| Saddle Mountain bitter cress | <u>Cardamine pattersonii</u> | Oregon (Clatsop Co.)  | Smithsonian | 5        |

Plants in part (R 1pp, 2, app, 6)

| SPECIES LISTINGS    |                                 |  |                                   |
|---------------------|---------------------------------|--|-----------------------------------|
| C. NAME             | SCIENTIFIC NAME                 | STATES/COUNTIES  | PETITIONER                        |
| Del Norte ficus     | <u>Erigeron delicatus</u>       | Oregon (Curry and Josephine Cos.);<br>California (possibly still in<br>Del Norte Co.)  | Smithsonian                       |
| western lily        | <u>Lilium occidentale</u>       | Oregon (Curry Co.); California<br>(Del Norte, Humboldt and<br>Siskiyou Cos. if extant) | Smithsonian                       |
| queen-of-the-forest | <u>Filipendula occidentalis</u> | Oregon (Clatsop and Tillamook<br>Cos.)   | Smithsonian                       |
| palma manaca        | <u>Banara vanderbiltii</u>      | Puerto Rico (Bayamón)  | SCS and Forest Service<br>reports |
|                     | <u>Calyptronoma rivalis</u>     | Puerto Rico (San Sebastián)  | SCS and Forest Service<br>reports |
|                     | <u>Zanthoxylum thomsonianum</u> | Puerto Rico and U.S. Virgin Islands  | SCS and Forest Service<br>reports |
| a boxwood           | <u>Buxus vahlii</u>             | Puerto Rico and U.S. Virgin Islands  | SCS and Forest Service<br>reports |

| CC | NAME          | SCIENTIFIC NAME                   | DATES/COUNTRIES     | PETITIONER                    | PRIORITY |
|----|---------------|-----------------------------------|---------------------|-------------------------------|----------|
|    |               | <u>Daphnopsis hellerana</u>       | Puerto Rico         | U.S. Forest Service<br>report | 3        |
|    | uvillo        | <u>Calyptranthes luquillensis</u> | Puerto Rico         | SCS and FS reports            | 11       |
|    | arana         | <u>Eugenia haenkeana</u>          | Puerto Rico         | SCS and FS reports            | 11       |
|    | bariso        | <u>Schoepfia aromatica</u>        | Puerto Rico         | SCS and FS reports            | 3        |
|    | stingingbush  | <u>Trichilia trisantha</u>        | Puerto Rico         | SCS and FS reports            | 3        |
|    | te            | <u>Malpighia pallens</u>          | U.S. Virgin Islands | U.S. Forest Service<br>report | 3        |
|    |               | <u>Ilex cookii</u>                | Puerto Rico         | SCS and FS reports            | 3        |
|    | palo colorado | <u>Ternstroemia subsessilis</u>   | Puerto Rico         | SCS and FS reports            | 11       |
|    |               | <u>Ternstroemia luquillensis</u>  | Puerto Rico         | SCS and FS reports            | 11       |

## PLANT LISTINGS

Plants in part (A pp. 2, 4pp. 6)

| AE              | SCIENTIFIC NAME                 | STATES/COUNTIES                                 | PETITIONER         | PAGE |
|-----------------|---------------------------------|---|--------------------|------|
| chupacallo      | <u>Pleodendron macranthum</u>   | Puerto Rico                                     | SCS and FS reports | 7    |
| causé           | <u>Myrcia poranilla</u>         | Puerto Rico                                     | SCS and FS reports | 7    |
| palo de jaramín | <u>Styrax portoricensis</u>     | Puerto Rico                                     | SCS and FS reports | 7    |
| capá rosa       | <u>Callicarpa amplia</u>        | Puerto Rico, possibly still U.S. Virgin Islands | SCS and FS reports | 11   |
| nigua           | <u>Cornutia obovata</u>         | Puerto Rico                                     | SCS and FS reports | 7    |
| nata buoy       | <u>Brumfelsia portoricensis</u> | Puerto Rico                                     | SCS and FS reports | 11   |
| crubia          | <u>Goetzea elegans</u>          | Puerto Rico                                     | SCS and FS reports | 5    |
|                 | <u>Solanum drymophilum</u>      | Puerto Rico                                     | SCS and FS reports | 11   |





## United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

JAN 6 1978

Honorable Robert L. Leggett  
Chairman, Subcommittee on Fisheries and  
Wildlife Conservation and the Environment  
Committee on Merchant Marine and Fisheries  
Washington, D.C. 20515

Dear Mr. Leggett:

I am pleased to respond further to your letter of July 26 regarding the administration of Section 7 of the Endangered Species Act of 1973.

We are enclosing our responses to each of the 43 questions posed, and it is my hope that you will find the information presented fully responsive to your request.

Please be assured that I appreciate your continuing efforts to resolve any unanswered questions concerning the intent of this landmark legislation which we have been mandated to administer. If I may be of further assistance, or provide any additional information, please let me know.

Sincerely,

(Sgd) David F. Hales

Acting Assistant ~~Secretary~~

Enclosure



## ATTACHMENT 1

## BIOLOGICAL CRITERIA FOR CRITICAL HABITAT

1. Definition of Critical Habitat: The following is the Service's Critical Habitat definition, which appeared in January 26, 1977, Federal Register (42 FR 4871).

"'Critical Habitat' means any air, land, or water area (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of a listed species) or any constituent thereof, the loss of which would appreciably decrease the likelihood of the survival and recovery of a listed species or a distinct segment of its population. The constituent elements of Critical Habitat include, but are not limited to, physical structures and topography, biota, climate, human activity, and the quality and chemical content of land, water, and air. Critical Habitat may represent any portion of the present habitat of a listed species and may include additional areas for reasonable population expansion."

2. Biological Concept of Critical Habitat: The Service's biological concept of Critical Habitat was published in the April 22, 1975, Federal Register (40 FR 17764-5) as follows:

"The role that natural and man-made factors play in affecting interrelationships between fauna and flora and the ecosystems upon which they depend needs to be recognized. For the continued viability of any species, suitable habitat is not only important but essential to life itself. The term "habitat" could be considered to consist of a spatial environment in which a species lives and all elements of that environment including, but not limited to, land and water area, physical structure and topography, flora, fauna, climate, human activity, and the quality of chemical content of soil, water, and air. "Critical Habitat" for any Endangered or Threatened species could be the entire habitat or any portion thereof, if, and only if, any constituent element is necessary to the normal needs or survival of that species. The following vital needs are relevant in determining "Critical Habitat" for a given species:

- (1) Space for normal growth, movement, or territorial behavior;
- (2) Nutritional requirements, such as food, water, minerals;
- (3) Sites for breeding, reproduction, or rearing of offspring;
- (4) Cover or shelter; or
- (5) Other biological, physical, or behavioral requirements."

The recommendation of Critical Habitat should include all of the elements necessary for the species to survive, or reach a point of recovery (i.e. reach a desired population level where the measures provided pursuant to the Act are no longer necessary), plus the species' normal needs (i.e., food, water, minerals; breeding, reproduction and rearing sites; cover and shelter; and any other necessary requirements). Critical Habitat should include areas, when appropriate, that are necessary for the species to expand its population and range, not just areas needed to maintain the present population or its short-term survival.

3. Special Considerations for Certain Biological Circumstances:

- A. River-inhabiting species (fish, molluscs) - current Critical Habitat procedure calls for designation of the main channel of rivers and creeks where the species occurs. Although river banks and adjacent land areas are not included per se in these Critical Habitats, it is of importance to realize that any action within the watersheds of the rivers in question should be examined with regard to its possible impact on the main channel. For example, clearing of riverbank vegetation could result in water temperature change; strip-mining might cause acid mine draining which would change the river's pH; logging could cause increased run-off which might in turn cause siltation of shoal areas or increased variance of seasonal water levels; etc.

Special cases might affect riverine species which use seasonally intermittent tributaries. Such "tribs" would also be Critical Habitat, including periods when the streams are dry.

- B. Marine Species - Critical Habitat for marine species will usually include only water areas within the species' range (e.g. sea otter); however, nesting and roosting areas on land might be included for some (e.g. brown pelican). It should be pointed out that actions on continental areas could affect the marine environment and should be considered for their potential impacts on Critical Habitat quality. For example, applications of persistent pesticides in all but land-locked drainages might be subject to Section 7 Consultation for their possible jeopardization of coastal marine species or their food supply.
- C. Island, Endemic, and Colonial Species - Included here are all island endemics, all species limited to single, small island-like habitats on the mainland (e.g. pupfish), and those species with several small populations. The majority of Endangered and Threatened species are in this category. All of these species can also be referred to as 'area-sensitive', that is their chance of long-term survival is proportional to the size of their habitat. This principle should be of first importance in the recommendation of Critical Habitat for such species. Not only should the entire present range be included, but recent former range as well, wherever reasonable. This latter point is of special relevance when natural colonization is likely or reintroduction efforts are called for.
- D. Large species of high trophic position (carnivores and omnivores) - Animals which occupy high trophic positions, eagles, falcons, bears, wolves, cats, which are not well-adapted to more than slightly man-altered habitats, rely upon extensive natural or

semi-natural areas as the territory or home range of a single pair or family group may be measured in the tens of square miles. To include an area large enough to accommodate a population of such species, Critical Habitats in the order of hundreds of square miles may be necessary to guarantee the long-term survival of such species. The habitat quality of such areas is equally important, and sufficient habitat during times of greatest stress, e.g. drought years or low points of prey cycles, should be taken into consideration. Thus, not only are breeding areas Critical Habitat, but potential year-round foraging areas (including prey populations) are also necessary elements of Critical Habitat.

For example, the Critical Habitat of the American peregrine falcon may include active eyrie sites, associated feeding areas, air spaces, adjacent areas in which human activity would cause abandonment of the eyrie, although peregrines do not directly use these areas, and historic or otherwise suitable eyrie locations that will be necessary for the species' expansion and recovery.

- E. Species which utilize a certain stage of community succession - Species which rely on a particular stage of community succession present a special case. The habitats of species such as the Kirtland's warbler and red-cockaded woodpecker are relatively ephemeral in an ecological sense. As community succession or fire may change the suitability of presently occupied habitats, the species must colonize new areas which have become suitable in the interim. Therefore, when outlining potential Critical Habitat, in addition to presently occupied habitats, consideration

should be given to sites for future colonization.

- F. Migratory species - For migratory species, not only are breeding and wintering sites suitable for Critical Habitat designation, but regular migratory stopover and feeding areas should also be included. For migratory mammals this includes traditional migratory routes. The above also applies to species with regular post-breeding seasonal movements, e.g. brown pelican, California condor.
- G. Non-Avian Species with Several Isolated Populations - Care must be taken to allow periodic free interchange of individuals between adjacent populations as periodic genetic interchange will decrease the chance that genetic problems might reduce a species' vigor or chances for long-term survival.

# 1. Critical Habitat Determinations.

QUESTION 1.1 What regulatory and administrative criteria are used by the U.S. Fish and Wildlife Service in determining whether or not the Service will initiate a determination of critical habitat? To what extent, if any, are non-biological factors considered?

ANSWER Generally, the Service will propose critical habitat for species to be listed under the Endangered Species Act of 1973 at the same time the species is proposed for listing. However, in some instances there are sufficient data available for a proposed listing but insufficient data on critical habitat. In this circumstance the listing proposal would be initiated to expedite the listing process. Once listed, the species would receive the full protection of Sections 7 and 9 of the Act.

Many Endangered species were listed under provisions of the 1966 and 1969 Endangered Species Acts, neither of which provided for critical habitat determination. Therefore, there is a backlog of previously listed species for which critical habitat is yet to be determined. Again, however, the absence of a critical habitat determination would not diminish the protection of the species under Sections 7 and 9 of the Act.

Non-biological factors are not considered.

QUESTION 1.2 What regulatory and administrative criteria are used in determining the critical habitat of a threatened or endangered species? To what extent, if any, are non-biological factors considered?

ANSWER The criteria used in determining critical habitat were first published on April 22, 1975 (40 FR 17764-17765) as a joint notice by the Directors of the Fish and Wildlife Service and the National Marine Fisheries Service (NMFS). The criteria included (1) space for normal growth, movements, or territorial behavior; (2) nutritional requirements, such as food, water, minerals; (3) sites for breeding, reproduction, or rearing of offspring; (4) cover or shelter; or (5) other biological, physical, or behavioral requirements. Non-biological factors are not considered.

QUESTION 1.3 What provision is made for private individuals to either petition the U.S. Fish and Wildlife Service for a determination that an area constitutes critical habitat or appeal a determination that an area constitutes critical habitat?

## ANSWER

Section 4(c)(2) of the Act provides that interested persons may, pursuant to 5 U.S.C. § 553(e), petition the Secretary regarding review of any listed or unlisted species upon submission by the petitioner of "substantial evidence" in support of the petition. While the Act does not specify that this mechanism is to be used for critical habitat, a petition filed pursuant to 5 U.S.C. § 553(e) would be given the same consideration as a petition to list or delist.

Section 4(f)(2)(A)(ii) provides that any proposed regulation, including critical habitat determination, may be objected to by persons adversely affected. The final regulation is final agency action from which there is no administrative appeal.

## QUESTION

1.4 How many written requests have been received by the U.S. Fish and Wildlife Service that a specific area be designated as critical habitat under the Act? With respect to each such request, please state:

- (a) the species and area concerned;
- (b) the person making the request (Federal or State agency; private individual or organization);
- (c) whether the request contained sufficient information to make a proposal for designation of critical habitat;
- (d) the present status of the request.

## ANSWER

The Service has received 12 written requests to designate specific areas as critical habitat. Information for each request is as follows:

- (1) Gopher tortoise (Gopherus agassizi) in Utah; requested by Dr. Glenn Stewart of the Desert Tortoise Council; sufficient information to make a proposal was presented; a proposal is now being prepared.
- (2) Whooping crane (Grus americana) in portions of Nebraska, North Dakota, and South Dakota; requested by Sierra Club and National Audubon Society; information now being evaluated; request is now under consideration.
- (3) Alligator (Alligator mississippiensis) and Southern bald eagle (Haliaeetus leucocephalus) in southeastern Louisiana; requested by Fund for Animals, Inc.; information insufficient; request was denied.



- (4) Puerto Rican whip-poor-will (Caprimulgus noctitherus) in three parts of Puerto Rico; requested by Ms. Barbara Bannister Cintron; information presented was not sufficient to make a proposal, but additional necessary data were compiled by the Service; a proposal is now being prepared.
- (5) Morro Bay kangaroo rat (Dipodomys heermanni morroensis) in a portion of San Luis Obispo County, California; requested by California Department of Fish and Game; sufficient information to make a proposal was presented; a proposal and a final designation of critical habitat was made.
- (6) Florida manatee (Trichechus manatus) in waterways of Broward County, Florida; requested by Broward County Board of Commissioners, Broward County Audubon Society, and other parties; information presented was not sufficient to make a proposal, but additional necessary data are being compiled; a proposal covering this area and other areas now is being prepared.
- (7) Gloeocantharellus purpurascens (a plant) in Great Smoky Mountains National Park; requested by Dr. Ronald H. Petersen, University of Tennessee; information insufficient; request is now under review.
- (8) Streptanthus squamiformis (a plant) in Beavers Bend State Park, Oklahoma; requested by Dr. R. John Taylor and Dr. C. Taylor, Eastern Oklahoma State University; information insufficient; request is now under review.
- (9) Cordylanthus mollis (a plant) in marshes at the mouth of Sacramento River, California; requested by Ms. Sue Carlson of Benicia, California; information insufficient; request now under review.
- (10) Camissonia benitensis (a plant) in San Benito County, California; requested by Ms. Alice Howard of California Native Plant Society; information insufficient; request is now under review.
- (11) Lasthenia minor ssp. maritima (a plant) at Yaquina Head and Otter Rock, Oregon; requested by Dr. Glenn P. Juday, Oregon State University, and by Oregon Natural Areas Preserves Advisory Committee; information insufficient; request is now under review.

- (12) Eryngium aristulatum var. parishii and Orcuttia californica ssp. californica (plants) in the vernal pool system of Mesa de Burro, Riverside County, California; requested by Ms. Barbara Carlson of San Bernardino Valley Audubon Society; information insufficient; request is now under review.

QUESTION 1.5 How many consultations with states have been initiated by the U.S. Fish and Wildlife Service concerning possible proposals for designation of a specific area as the critical habitat of a protected species?

ANSWER All States were consulted relative a notice published in the Federal Register of May 16, 1975 (40 FR 21499-21500) by which the Service announced its intention to investigate and eventually determine critical habitat for all species then listed as Endangered. Furthermore, each appropriate State was consulted relative to the proposals listed in 1.6 below.

QUESTION 1.6 How many proposals of critical habitat have been published by the U.S. Fish and Wildlife Service in the Federal Register for public comment? For each such proposal please state:

- (a) The species and area concerned;
- (b) whether the proposal was initiated by the Service or in response to a request;
- (c) the date and Federal Register citation of the proposal;
- (d) the date of final action, if any, on the proposal.

ANSWER The Service has published critical habitat proposals for 54 species. Information for each species follows:

- (1) Mississippi sandhill crane (Grus canadensis pulla) in Jackson County, Mississippi; initiated by the Service; published September 3, 1975 (40 FR 40521-40522); final designation August 8, 1977.
- (2) Snail darter (Percina tanasi) in the Little Tennessee River, Tennessee; initiated by the Service; published December 16, 1975 (40 FR 58308-58312); final designation April 1, 1976.
- (3) American crocodile (Crocodylus acutus) in southern Florida; initiated by the Service; published December 16, 1975 (40 CFR 58308-58312); final designation September 24, 1976.

- (4) Whooping crane (Grus americana) in parts of Texas, Oklahoma, Kansas, Nebraska, Idaho, Colorado, and New Mexico; initiated by the Service; published December 16, 1975 (40 FR 58308-58312); final designation being prepared.
- (5) Indiana bat (Myotis sodalis) in certain caves and mines in Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia; initiated by the Service; published December 16, 1975 (40 FR 58308-58312); final designation September 24, 1976.
- (6) Florida manatee (Trichechus manatus) in portions of Florida; initiated by the Service; published December 16, 1975 (40 FR 58308-58312); final designation September 24, 1976.
- (7) California condor (Gymnogyps californianus) in parts of California; initiated by the Service; published December 16, 1975 (40 FR 58308-58312); final designation September 24, 1976.
- (8) Yellow-shouldered blackbird (Agelaius xanthomus) in Puerto Rico; initiated by the Service; published June 10, 1976 (41 FR 23406-23408); final designation November 19, 1976.
- (9) Leopard darter (Percina pantherina) in certain waterways in Oklahoma and Arkansas; initiated by the Service; published July 6, 1976 (42 FR 27735-27738); final determination is now being reviewed.
- (10) Cape Sable sparrow (Ammospiza maritima mirabilis) in southern Florida; initiated by the Service; published July 15, 1976 (41 FR 28978-28979); final designation August 11, 1977.
- (11) American peregrine falcon (Falco peregrinus anatum) in California; initiated by the Service; published August 30, 1976 (41 FR 37516-36517); final designation August 11, 1977.
- (12) Morro Bay kangaroo rat (Dipodomys heermanni morroensis) in San Luis Obispo County, California; initiated in response to a request from California Department of Fish and Game; published August 30, 1976 (41 FR 36517-36518); final designation August 11, 1977.
- (13) Grizzly bear (Ursus arctos horribilis) in portions of Wyoming, Montana, Idaho, and Washington; initiated by the Service; published November 5, 1976 (41 FR 48757-48759); final determination is being prepared.

- (14) Florida Everglade kite (Rostrhamus sociabilis plumbeus) in southern Florida; initiated by the Service; published December 3, 1976 (41 FR 53074-53075); final designation August 11, 1977.
- (15) Dusky seaside sparrow (Ammospiza maritima nigrescens) in eastern Florida; initiated by the Service; published December 3, 1976 (41 FR 53074-53075); final designation August 11, 1977.
- (16) Palila (Psittirostra bailleyi) in Hawaii; initiated by the Service; published January 10, 1977 (42 FR 2101-2102); final designation July 21, 1977.
- (17) Giant anole (Anolis roosevelti) on Culebra Island, Puerto Rico; initiated by the Service; published January 10, 1977 (42 FR 2101-2102); final designation July 21, 1977.
- (18) St. Croix ground lizard (Ameiva polops) in U.S. Virgin Islands; initiated by the Service; published January 10, 1977 (42 FR 2102-2104); initiated by the Service; final designation June 3, 1977.
- (19) Slender chub (hybopsis cahnii) in certain waterways in Tennessee and Virginia; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); final designation September 8, 1977.
- (20) Spotfin chub (Hybosis monacha) in certain waterways in Tennessee and Virginia; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); final designation September 8, 1977.
- (21) Slackwater darter (Etheostoma boschungii) in certain waterways in Alabama and Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); final designation September 8, 1977.
- (22) Yellowfin madtom (Noturus flavipinnis) in certain waterways in Tennessee and Virginia; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); final designation September 8, 1977.
- (23) Alabama cave fish (Speoplatyrhinus pouisoni) in Key Cave, Lauderdale County, Alabama; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); final designation September 8, 1977.
- (24) Armigerous river snail (Io armigera armigera) in Tennessee River, Kentucky; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.

- (25) Rugged river snail (Io salebrosa) in Duck River, Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (26) Dutton's river snail (Io armigera duttoniana) in Duck River, Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (27) Elk River file snail (Io verrucosa lima) in Elk River, Tennessee and Alabama; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (28) Geniculate river snail (Io geniculata geniculata) in Duck River, Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (29) Indiana river snail (Goniobasis semicarinata indianensis) in Blue River, Indiana; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (30) Jay's river snail (Io armigera jayana) in Duck River, Tennessee; initiated by the Service; published January 1, 1977 (42 FR 2507-2515); no final action.
- (31) Mainstream river snail (Loptopsis praerosa) in Nolichucky River, Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (32) Small geniculate river snail (Io geniculata penguis) in Collins and Duck Rivers, Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (33) Spiny river snail (Io fluvialis) in Powell, Clinch, and Nolichucky Rivers, Tennessee and Virginia; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (34) Umbilicate river snail (Septoxis subglobosa umbilicata) in Stones River, Tennessee; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (35) Verrucose river snail (Io verrucosa verrucosa) in Tennessee and Nolichucky Rivers, Tennessee and Kentucky; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.

- (36) California freshwater shrimp (Syncaris pacifica) in certain waterways in California; initiated by the Service; published January 12, 1977 (42 FR 2507-2515); no final action.
- (37) Lotis blue butterfly (Lycaeides argyrognomon) in Mendocino County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (38) Lange's metalmark butterfly (Apodemia mormo langei) in Contra Costa County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (39) San Bruno elfin butterfly (Calliphrys mossii bayensis) in San Mateo County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (40) Mission blue butterfly (Icaricia icarioides missionensis) in San Francisco County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (41) Smith's blue butterfly (Shijimiaeoides enoptes smithi) in Monterey County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (42) El Segundo blue butterfly (Shijimiaeoides battoides allyni) in Los Angeles County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (43) Contra Costa wallflower (Erysimum capitatum var. angustatum) in Contra Costa County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (44) Antioch Dunes evening primrose (Oenothera deltoides ssp. howellii) in Contra Costa County, California; initiated by the Service; published February 8, 1977 (42 FR 7972-7975); no final action.
- (45) Black toad (Bufo exsul) in Inyo County, California; initiated by the Service; published March 11, 1977 (42 FR 13567-13569); final determination being prepared.

- (46) Golden coqui (Eleutherodactylus jasperii) in Puerto Rico; initiated by the Service; published April 5, 1977 (42 FR 18106-18109); final determination being reviewed.
- (47) Pine barrens treefrog (Hyla andersonii) in Florida; initiated by the Service; published April 5, 1977 (42 FR 18109-18111); final determination being reviewed.
- (48) Mona boa (Epicrates monensis) on Mona Island, Puerto Rico; initiated by the Service; published May 26, 1977 (42 FR 27003-27007); no final action.
- (49) Mona ground iguana (Cyclura stejnegeri) on Mona Island, Puerto Rico; initiated by the Service; published May 26, 1977 (42 FR 27003-27007); no final action.
- (50) Mona blind snake (Typhlops monensis) on Mona Island, Puerto Rico; initiated by the Service; published May 26, 1977 (42 FR 27003-27007); no final action.
- (51) New Mexican ridge-nosed rattlesnake (Crotalus willardi obscurus) in Hidalgo County, New Mexico; initiated by the Service; published May 26, 1977 (42 FR 27003-27007); no final action.
- (52) Houston toad (Bufo houstonensis) in Bastrop, Burleson, and Harris Counties, Texas; initiated by the Service; published May 26, 1977 (42 FR 27003-27007); no final action.
- (53) Gray wolf (Canis lupus) in Minnesota and Michigan; initiated by the Service; published June 9, 1977 (42 FR 29527-29533); no final action.
- (54) Little Kern golden trout (Salmo agnabonita whitei) in the Little Kern river and tributaries, California; initiated by the Service; published September 1, 1977 (42 FR 43995-43997); no final action.

QUESTION 1.7 How many final determinations of critical habitat have been made by the U.S. Fish and Wildlife Service? For each such determination, please state:

- (a) the species and area concerned;
- (b) the date of determination;
- (c) the respective amounts of land owned by Federal, State and local agencies and private individuals which were encompassed by the designation;

- (d) the number and type of any Federal projects modified or delayed as a result of such designation;
- (e) the number and type of Federal leases, contracts or permits concerning Federal lands (e.g., timber, mineral, grazing), if any, effected by the determination.

## ANSWER

(a), (b), and (c). The Service has published final critical habitat designations for 15 species. Information for each species follows:

- (1) Snail darter (Percina tanasi) in the Little Tennessee River, Tennessee; designation April 1, 1976; 16.5 river miles, all Federal.
- (2) American crocodile (Crocodylus acutus) in southern Florida; designation September 24, 1976; approximately 1,000 square miles, of which about 800 are Federal and 200 private.
- (3) Indiana bat (Myotis sodalis) in certain caves and mines in Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia; designation September 24, 1976; of these 13 point localities, six are private, three are Federal, and four are State.
- (4) Florida manatee (Trichechus manatus) in portions of Florida; designation September 24, 1976; nearly the entire area consists of navigable waterways.
- (5) California condor (Gymnogyps californianus) in parts of California; designation September 24, 1976; approximately 900 square miles, of which about 400 square miles are Federal and the remainder mostly private.
- (6) Yellow-shouldered blackbird (Agelaius xanthomus) in Puerto Rico; designation November 19, 1976; approximately 80 square miles, most of which are private, but also including Mona Island which is under jurisdiction of the Commonwealth, and the Roosevelt Roads Naval Station.
- (7) Mississippi sandhill crane (Grus canadensis pulla) in Jackson County, Mississippi; designation August 8, 1977; approximately 40 square miles, of which about two-thirds will be acquired for a National Wildlife Refuge and the remainder of which is mostly private.



- (8) Cape Sable sparrow (Ammospiza maritima mirabilis) in southern Florida; designation August 11, 1977; approximately 300 square miles, of which 27 are private and the remainder Federal.
- (9) American peregrine falcon (Falco peregrinus anatum) in California; designation August 11, 1977; approximately 26 square miles, of which the greater portion is private, but with scattered State and Federal tracts.
- (10) Morro Bay kangaroo rat (Dipodomys heermanni morroensis) in San Luis Obispo County, California; designation August 11, 1977; approximately one square mile, of which about one-third is State-owned and the remainder private.
- (11) Florida Everglade kite (Rostrhamus sociabilis plumbeus) in southern Florida; designation August 11, 1977; approximately 1,100 square miles, of which about 400 are Federal, 600 are under control of the Central and Southern Florida Flood Control District, and the remainder is in other ownership.
- (12) Dusky seaside sparrow (Ammospiza maritima nigrescens) in eastern Florida; designation August 11, 1977; approximately 50 square miles, of which about 10 square miles are Federal, and the remainder mostly in local and private ownership.
- (13) Palila (Psittirostra baileyi) in Hawaii; designation August 11, 1977; approximately 120 square miles, predominantly State-owned.
- (14) St. Croix ground lizard (Ameiva polops) in U.S. Virgin Islands; designation June 3, 1977; 15 acres, all private or leased to private individuals by the Virgin Islands Government.
- (15) Giant anole (Anolis roosevleti) on Culebra Island, Puerto Rico; designation January 10, 1977; two square miles, mostly owned by the Commonwealth, but with small portions under Federal or private ownership.

(d) and (e) Three Federal projects have been modified or delayed: one dam project, one stream channelization project, and one interstate highway interchange.

One Federal lease has been affected by critical habitat determination.

*Per Mtn. phosphate lease  
condemned habitat*

QUESTION 1.8 For each determination described in 1.7 which encompassed lands owned by non-federal entities please state:

- (a) whether the owner or owners were notified of the proposed designation;
- (b) whether the owner or owners objected to the designation;
- (c) whether any compensation was requested by the owner or owners as a result of the designation;
- (d) how much compensation, if any, was paid to the owner or owners as a result of the designation;
- (e) the steps, if any, taken to acquire or purchase the lands, or interests therein, encompassed by the determination which were not within the jurisdiction of a Federal agency at the time of the determination;
- (f) the steps, if any, taken to protect the non-federally owned lands from nonfederal actions harmful to the critical habitat concerned.

ANSWER

1.8(a) As with all Federal regulations impacting the public, critical habitat listings are first issued as published proposals in the Federal Register and open to public comment for at least 60 days. In most cases, however, individual non-Federal landowners were not given special additional notice. The courts have consistently held that publication of a notice in the Federal Register is adequate notification of proposed administrative actions. Additional notification has been deemed to be unnecessary because critical habitat determination only directly affect the activities of Federal agencies and not those of private landowners. The private owner of Green Cay in the Virgin Islands was notified after the proposed designation of critical habitat for the St. Croix ground lizard. With regard to State-owned lands, notification of proposals always is given to Governors as required by the Act.

(b) There have been no objections from the determinations listed in 1.7.

(c) No compensation was requested.

(d) No compensation has been paid.

(e) The question of land acquisition is not directly related to critical habitat designation; one does not necessarily follow the other. Although efforts are underway to acquire land for the Indiana bat, California condor, Mississippi sandhill crane, and St. Croix ground lizard, such measures would be proceeding regardless of whether formal critical habitat designations had been made. The reason for this is that most lands being acquired are privately owned and private citizens are not necessarily affected by Section 7.

(f) By regulation published September 26, 1975 (40 FR 44412-44429) the Service defined "harm" as used in the definition of "take" in the Act to include an "act or omission which actually injures or kills wildlife including . . . significant environmental modification or degradation." The prohibitions of Section 9 of the Act would therefore afford some protection to non-federally owned lands from non-Federal actions, whether or not critical habitat had been designated. However, Section 5 of the Act expresses the congressional intent that land acquisition is to be utilized by the Secretary where necessary to implement a program for the conservation of listed species. If there is a serious threat to habitat on private lands, land acquisition would provide the primary vehicle for affording protection.

## QUESTION

1.9 Please provide a summary of each lawsuit arising from a proposed or final determination of critical habitat under Section 7 of the Act including information concerning the identity of plaintiffs and defendants; the legal issues raised; the Federal activity and geographical area involved; the disposition, if any, of the legal issues; the resulting delay, if any, in implementing the Federal action involved; and the present status of the case.

## ANSWER

There have been three lawsuits based on the Endangered Species Act of 1973. They are as follows:

(a) The Sierra Club brought suit against the U.S. Army Corps of Engineers to halt construction of the Meramec Park Lake Project in eastern Missouri. The suit was decided in favor of the Corps of Engineers with the finding that the action would not be in violation of the Endangered Species Act.

(b) The National Wildlife Federation brought suit against the Department of Transportation to prevent the construction of Interstate Highway I-10 in Jackson County, Mississippi, in the habitat of the Mississippi sandhill crane. A court of

appeals decision enjoined construction of an interchange of the highway until the Department of Transportation could insure that the development of adjoining lands would not be detrimental to the continued survival of the cranes and their critical habitat.

(c) Three individuals, later joined by the Audubon Council of Tennessee and the Association of Southeastern Biologists, brought suit against the Tennessee Valley Authority to halt construction of the Tellico Dam on the Little Tennessee River. A district court decision permitted the project to continue, but the court of appeals issued a permanent injunction against further construction and closure of the dam until such time as the snail darter and its critical habitat are delisted or Congress exempts the project from the requirements of the Act.

**QUESTION** 1.10 In his Environmental Message of May 23, 1977, President Carter stated that: "...I am directing the Secretaries of Commerce and Interior to coordinate a Government-wide effort, as required by the Endangered Species Act of 1973, to identify all habitats under Federal jurisdiction or control that is critical to the survival and recovery of (threatened and endangered) species." What steps have you taken, and plan to take to comply with this direction? What criteria will be used in establishing priorities for determining critical habitat under this direction? When will all such habitat be identified?

**ANSWER** The Fish and Wildlife Service has now completed a preliminary draft of procedures to assist other agencies in meeting the directives of the President's memorandum of May 23 to the Secretaries of Interior, Agriculture, and Defense, and the Chairman of the Tennessee Valley Authority. This procedure establishes a format for critical habitat submissions, specifies biological criteria for critical habitat, and develops priority categories for all listed species. We met with the concerned agencies to finalize the procedures on December 9, 1977. Federal agencies are now making their determinations according to a prioritized list of species that was given them on December 9.

The priority for determining critical habitat is based on the criteria of the degree of threat to the species, the current availability of sufficient information to complete a rulemaking, and the taxonomic status of the species. Attachment one (1) describes the specific biological criteria to be used.

It is anticipated that determination of critical habitat for all presently listed species will be completed in approximately 2 years.

**QUESTION** 1.11 To what extent will the U.S. Fish and Wildlife Service determine the critical habitat for those species under its jurisdiction presently listed as threatened or endangered? When will these determinations be completed? For each species, if any, that will not have its critical habitat determined please state:

- (a) the species;
- (b) the reason or reasons why the critical habitat of that species will not be designated.

**ANSWER** The extent of critical habitat determinations and the time anticipated to complete these determinations is discussed in 1.10.

QUESTION 1.12 Please estimate the time and cost to the U.S. Fish and Wildlife Service of determining the critical habitat for the species described in 1.11.

ANSWER The time required to determine critical habitat for all presently listed species is 2 years, as indicated in 1.10 above. The Service has programmed \$300,000 in FY 78 and an estimated \$1,000,000 will be required in FY 79 to accomplish these determinations.

The above minimum estimates assume that no special studies will have to be made to get the necessary data for critical habitat determinations and that no Environmental Impact Statements will have to be prepared. If either of the above assumptions are incorrect, the cost will increase accordingly and could easily triple or quadruple the estimate.

## 2. Destruction or Modification of Critical Habitat.

**QUESTION** 2.1 Section 7 of the Act requires all Federal agencies to ensure that their actions do not result in the "destruction or modification" of critical habitat. What regulatory or administrative criteria are used by the U.S. Fish and Wildlife Service to determine whether or not Federal actions would result in the "destruction or modification" of critical habitat?

**ANSWER** The Fish and Wildlife Service and the National Marine Fisheries Service established criteria for destruction or modification of critical habitat in guidelines which were made available to Federal agencies in March 1976. In addition, proposed regulations for Section 7 implementation (42 FR 4868-4875) provide criteria which will be used when the regulations are published in final in the near future.

**QUESTION** 2.2 What steps have the U.S. Fish and Wildlife Service taken to ensure that the criteria described in 2.1 are consistent with those used by other Federal agencies?

**ANSWER** It is the position of the Fish and Wildlife Service that it is authorized by the Act to issue such regulations as are necessary for the conservation of listed species, including regulations implementing Section 7. These regulations are binding on all Federal agencies who must insure that their internal regulations and procedures are consistent with the general regulations of the Fish and Wildlife Service. In order to familiarize other Federal agencies with the requirements of Section 7, and at the same time gain valuable suggestions on ways to improve the consultation process, the Service first met with representatives of other Federal agencies to develop voluntary "guidelines," which were drafted in May 1975. During 1976-77, while the proposed regulations were being drafted, they were submitted to two Quality of Life Reviews at OMB to insure that other agencies had an adequate opportunity to comment on the requirements of the regulations. Following promulgation of the final regulations they will be binding upon our Department as well as other agencies.

**QUESTION** 2.3 What plans, if any, do you have to modify the criteria described in 2.1?

**ANSWER** Although the regulations have not yet been published as a final rulemaking, we anticipate no major modifications to the criteria.

QUESTION 2.4 How many actions authorized, funded or carried out by Federal agencies in Fiscal Year 1977 might result in the "destruction or modification" of critical habitat under the criteria described in 2.1?

ANSWER Two Federal agency actions were found by the Service in FY 77 to result in the destruction or adverse modification of critical habitat.

QUESTION 2.5 How many proposed actions authorized, funded or carried out by Federal agencies each year might result in the "destruction or modification" of critical habitat under the criteria described in 2.1 after the date the critical habitat determinations described in 1.11 are completed?

ANSWER The number of Federal actions which might destroy or adversely modify critical habitat, when critical habitat has been determined for all listed species, could only be established by a project-by-project evaluation of those actions requiring consultation.

### 3. Jeopardy of Species

QUESTION 3.1 Section 7 of the Act requires all Federal agencies to ensure that their actions do not "jeopardize the continued existence" of protected species. What administrative and regulatory criteria are used by the U.S. Fish and Wildlife Service for determining whether or not Federal actions "jeopardize the continued existence" of protected species?

ANSWER "Jeopardize the continued existence" means to engage in an activity or program which reasonably would be expected to reduce the reproduction, numbers, or distribution of a listed species to such an extent as to appreciably reduce the likelihood of the survival and recovery of that species in the wild. The level of reduction necessary to constitute "jeopardy" would be expected to vary among listed species. These criteria are presently contained in the draft regulations. Final regulations are anticipated in the near future.

QUESTION 3.2 What steps have the Service taken to ensure that the criteria described in 3.1 are consistent with those used by other Federal agencies?

ANSWER See the procedure described under 2.2 above.

QUESTION 3.3 What plans, if any, do you have to modify the criteria described in 3.1?

ANSWER There are no plans to modify the criteria.



- QUESTION 3.4 How many actions authorized, funded or carried out by Federal agencies each year might "jeopardize the continued existence" of threatened or endangered species under the criteria described in 3.1?
- ANSWER Two Federal agency actions were found by the Service in FY 77 to result in "jeopardizing the continued existence" of listed species.
- QUESTION 3.5 To what extent do the criteria described in 2.1 and 3.1 overlap or conflict? How many of the actions identified in your answer to 2.4 and 2.5 are the same actions identified in 3.4?
- ANSWER The criteria described in 2.1 and 3.1 are complimentary. Two actions identified in 2.4 are the same as identified in 3.4.

#### 4. Consultation with Federal Agencies.

- QUESTION 4.1 Section 7 of the Act requires that all Federal agencies consult with the Secretary concerning actions which might jeopardize the continued existence of a protected species or destroy or modify its critical habitat. How many such consultations were initiated in Fiscal Year 1975, 1976 and 1977?
- ANSWER No consultation actions were initiated in FY 75. Approximately 4,500 such actions were initiated in FY 76 and FY 77, combined.
- QUESTION 4.2 What is your estimate of the number of the consultations described in 4.1 which will be initiated in Fiscal Year 1978?
- ANSWER We estimate that approximately 6,000 to 12,000 consultations will occur in FY 78.
- QUESTION 4.3 To what extent were the consultations described in 4.1 accomplished in conjunction with consultations required under other laws? Please identify any of these other consultation requirements.
- ANSWER Other laws which involve consultation include, but may not be limited to, the National Environmental Policy Act, the Fish and Wildlife Coordination Act, and the Historic Preservation Act. It has consistently been the position of the Service that other agencies should coordinate their Section 7 consultation with other required environmental reviews. However, procedural compliance with these other statutory obligations for consultation does not automatically signify that the consultation responsibility under Section 7 has been satisfied. Thus, for instance, good faith consultation under Section 7 could easily require more than the circulation of a draft EIS for agency comment. Consultation under these laws would not substitute for consultation under the Endangered Species Act if listed species were impacted by a given action.

QUESTION 4.4 What was the average time taken to complete a consultation under Section 7 of the Act in FY 77?

ANSWER The average time taken to complete a consultation was approximately three (3) man-weeks in FY 77.

QUESTION 4.5 When will final regulations concerning consultations under Section 7 be issued?

ANSWER Final Section 7 regulations are anticipated to be issued in the very near future.

QUESTION 4.6 How many interagency conflicts have arisen during consultations under Section 7?

ANSWER Two conflicts have arisen during consultation under Section 7.

QUESTION 4.7 For each interagency conflict identified in 4.6 not resolved successfully during the consultation process, please state:

- (a) the agency and project involved;
- (b) the nature of the conflict;
- (c) a detailed account of agency efforts to resolve the controversy;
- (d) the present status of the conflict.

ANSWER (a) Tennessee Valley Authority: Tellico Dam  
Columbia Dam

(b) Agency has not accepted final biological opinion of the Service.

(c) Columbia Dam, Duck River Biological opinion rendered 2/16/77; adverse impacts identified.

Tellico Dam Project, Tennessee Critical habitat determined for the snail darter on 12/16/75; biological opinion rendered 10/12/76 indicating jeopardy to snail darter; Circuit Court ruling of 1/31/77 enjoined dam completion. Extensive meetings with TVA to evaluate alternatives.

(d) Tellico Dam: Exemption being sought from ESA by TVA through Congress and judiciary.

Columbia Dam Consultation ongoing.

**QUESTION** 4.8 What benefits to protected species have accrued as a result of the consultation requirement in section 7? (Please identify specific instances of benefits.) What other benefits if any, have accrued?

|   |   |
|---|---|
| <b>ANSWER</b> Choccalocco Creek, Alabama, Channelization work (Red-cockaded woodpecker)               | Through informal consultation, activity modifications were incorporated into plan where work can be done at a time of year to prevent disturbance of Alabama Red-cockaded woodpecker nests. |
| Colville River oil line permit (Arctic peregrine falcon)  | General modification is no work in the sensitive areas (Colville River) from May 1 to August 1; eliminate some drilling area.   |
| Trans Alaska oil pipeline - 12 pumping stations, Sagon Bluffs, Alaska-Brooks Range (peregrine falcon) | Private airfield seasonally suspended to protect nesting sites; servicing pump station restricted height and horizontal distance of falcons.  |
| Leslie Canyon Dam, Federal Aid project (Gila topminnow)   | Threshold examination conducted; adverse impact to species; aid cut and project abandoned.  |
| Channelization of Little Auglaizie River (Indiana bat)  | Threshold examination conducted on 8/7/76. FWS recommended to agency use of one-sided channelization to avoid impact to species. Modification being incorporated.                           |

The above presents some examples of the major benefits to protected species. However, it should be instructed that less spectacular benefits have accrued regularly. The sum total of these other benefits add up to large plus for Endangered and Threatened species.

**QUESTION** 4.9 What will be the total costs incurred by the U.S. Fish and Wildlife Service in FY 1978 as a result of the consultation requirements of Section 7 of the Act?

**ANSWER** The total costs for Section 7 Consultation estimated to be incurred by the Service in FY 78 will be approximately \$600,000 to \$1,000,000.

## 5. National Environmental Policy Act

**QUESTION** 5.1 We are informed that to date the Fish and Wildlife Service has implemented Section 7 of the Act without benefit of either

a programmatic or specific environmental impact statement under the National Environmental Policy Act. Is this correct?

ANSWER

A final environmental impact statement was prepared by the Fish and Wildlife Service and filed with the Council on Environmental Quality (CEQ) to accompany the legislation drafted by the Department of the Interior which, with modification, ultimately became the Endangered Species Act of 1973. A draft environmental impact statement was also prepared by the Fish and Wildlife Service in conjunction with the International Convention on Trade in Endangered Species of Wild Fauna and Flora, which was implemented by the Endangered Species Act of 1973. A programmatic environmental impact statement is now being prepared by the Service for the Endangered Species Program.

QUESTION

5.2 Will environmental statements be prepared for future actions under Section 7? If so, for which proposed actions do you plan to prepare a statement?

ANSWER

Environmental impact assessments will continue to be prepared for all critical habitat determinations made under Section 7 of the Act. If, after reviewing the assessment, it is determined that the proposed action is a "major federal action significantly affecting the quality of the human environment" an environmental impact statement will be prepared.

QUESTION

5.3 Why have environmental statements not been prepared and considered in connection with: the listing of species as threatened or endangered; the designation of critical habitat, and, the program in general?

ANSWER

As indicated in 5.2 above, environmental impact assessments are prepared for critical habitat designations. They are also prepared for all listing actions. This process was recently addressed by Mr. Charles Warren, Chairman of the Council on Environmental Quality, in testimony before the Subcommittee on Resource Protection of the Senate Committee on Environment and Public Works. In response to a question from Chairman Culver, Mr. Warren stated that "... we do not believe it would be appropriate or improve the process to any appreciable degree to require a completed environmental impact statement along with the suggestion that critical habitat be identified and designated. We think that NEPA does apply to that, that the environmental sustenance (sic) [assessment] is required, but it would not be appropriate or in furtherance of the Act to require specifically that an environmental statement itself be prepared in each and every instance."

QUESTION 5.4 Please provide a summary of any lawsuit arising from the failure of the Fish and Wildlife Service to prepare and consider an adequate environmental impact statement in connection with its implementation of Section 7 of the Act.

ANSWER The Department was served with a complaint on December 15, 1977 requesting a Preliminary Injunction for the alleged failure to comply with NEPA while listing several species in the Duck River, Tennessee. The case is still pending.

## 6. General

QUESTION 6.1 Are additional legal authorities needed to identify the critical habitat of threatened or endangered species in a timely manner? Please described any needed authority and the reasons why this authority is needed.

ANSWER We do not believe that any additional legal authorities are needed to identify the critical habitat of Threatened or Endangered species in a timely manner.

QUESTION 6.2 Are additional legal authorities needed to protect the habitat of threatened or endangered species from the actions of:

- (a) Federal agencies?
- (b) State agencies?
- (c) private individuals or corporations?

ANSWER No additional legal authorities are needed to protect the habitat of Threatened or Endangered species from the actions of Federal agencies, State agencies, or private individuals or corporations.

QUESTION 6.3 To what extent have the requirements of Section 7 of the Act been applied to Federal actions beyond the geographical jurisdiction of the United States?

ANSWER The jeopardy clause of Section 7 would apply to Federal actions beyond the geographical jurisdiction of the United States, but not the clause relating to destruction or modification of critical habitat. At the present time the Services does not have the resources to apply Section 7 review of extra-territorial activities of Federal agencies as a whole, but the Service would respond to any specific situation which came to its attention when such actions might jeopardize a listed species.

..

QUESTION 6.4 What progress in restoring threatened and endangered species has been made as a result of Section 7 of the Act?

ANSWER Attachment three(3) is an advance copy of the annual report of the Endangered Species Program which addresses in detail the full spectrum of accomplishments in protecting and restoring Endangered and Threatened species.

QUESTION 6.5 Please describe those classes of Federal actions which pose the greatest dangers to the continued existence of threatened and endangered species and their critical habitat and identify the agencies taking such actions.

ANSWER No particular class of Federal action would necessarily pose a greater danger to listed species than another. The magnitude and duration of the action and the sensitivity of the species would have to be considered on a case-by-case basis. No particular agencies can be identified unless specific actions can be evaluated.

QUESTION 6.6 Section 7 of the Act directs the Secretary of the Interior to utilize programs administered by him in furtherance of the purposes of the Act. Which such programs have been utilized most often in protecting the critical habitat of threatened or endangered species? Please describe the extent to which these programs have been so used. To what extent, if any, could these programs be strengthened to further protect critical habitat?

ANSWER The programs used most often to protect the critical habitat of threatened or endangered species are those of the Fish and Wildlife Service. The extent to which these programs have been used are described in detail in the answers to questions 1 and 2 above. In addition, the Bureau of Land Management's Manual Section 6840 (Attachment 2) gives direction and policy guidance to insure that BLM's programs and activities protect critical habitat of threatened and endangered species. And, the Bureau of Reclamation has several projects designed to benefit endangered or threatened species and their habitat. All of these programs could be strengthened by increases in available funding and manpower resources.

QUESTION 6.7 What procedure would provide the best mechanism for assessing and resolving any conflicts that might arise between the preservation of critical habitat and other national goals? Why is this procedure preferred over other alternatives?

ANSWER The consultation process provided for under Section 7 of the Act provides an excellent mechanism for resolving conflicts between critical habitat preservation and other national goals. This process is preferred over other alternatives because it provides a workable solution to resolving conflicts and has been proven successful.

QUESTION 6.8 What recommendations, if any, do you have to strengthen or improve Section 7?

ANSWER We have no recommendations to strengthen or improve Section 7.



THE SECRETARY OF COMMERCE  
Washington, D. C. 20540

SEP 23 1977

Dear Mr. Chairman:

I regret the delay in response to your recent letter concerning Section 7 of the Endangered Species Act of 1973. I am transmitting herewith the answers to the questions you posed regarding our experience in administering those portions of the Act pertaining to the Department of Commerce.

We share with you a concern for maintaining habitat critical for the survival of threatened and endangered species, and look forward to working with your Subcommittee on this matter.

Please contact me if we may be of further assistance to you.

Sincerely,

JUANITA M. KREPS

Juanita M. Kreps

Enclosure

Honorable Robert L. Leggett  
Chairman  
Subcommittee on Fisheries and  
Wildlife Conservation and the  
Environment  
Committee on Merchant Marine and Fisheries  
House of Representatives  
Washington, D. C. 20515

ENDANGERED SPECIES CONSERVATION

|                         | FY 1977 |         | FY 1978 |           | FY 1979 |           | Authorization          |
|-------------------------|---------|---------|---------|-----------|---------|-----------|------------------------|
|                         | Base    | Pos     | Base    | Pos       | Base    | Pos       |                        |
| Endangered Species Act: |         |         |         |           |         |           |                        |
| Section 15              |         |         |         |           |         |           |                        |
| Section 6               | 9       | 565,000 | 12      | 1,548,000 | 14      | 1,963,000 | 5,000,000 <sup>2</sup> |
| Line Item Total         | 9       | 565,000 | 12      | 1,548,000 | 1       | 300,000   | 16,000,000             |
| Proposed Reprogramming  |         |         |         |           | 15      | 2,263,000 |                        |
| Cetaceans Program from  |         |         |         |           |         |           |                        |
| Marine Mammals          |         |         | + 6     | 294,000   | + 6     | 294,000   |                        |
| Sea Turtles             |         |         | —       | 263,000   | —       | 263,000   |                        |
| Proposed Total          |         |         | 18      | 2,105,000 | 21      | 2,820,000 |                        |

1/ Shared with Dept. of Interior  
 2/ Expires 9/30/78



RESPONSE TO THE HONORABLE ROBERT L. LEGGETT, CHAIRMAN,  
SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION AND THE ENVIRONMENT,  
CONCERNING SECTION 7 OF THE ENDANGERED SPECIES ACT OF 1973.

1. Critical Habitat Determinations.

Q. 1.1 What regulatory and administrative criteria are used by the National Marine Fisheries Service (NMFS) in determining whether or not NMFS will initiate a determination of critical habitat? To what extent, if any, are non-biological factors considered?

A. In determining whether or not NMFS will initiate a determination of critical habitat, the Director, NMFS, first considers the sufficiency of available biological information on the habitat in question. Two basic administrative criteria are: (1) that the habitat is believed necessary to the survival or recovery of endangered or threatened species; and (2) that the administration and management of this area as critical habitat will provide an important means to protecting endangered or threatened species.

At present, there are no regulatory criteria for initiating a critical habitat designation. However, NMFS and FWS are in the process of formulating joint final regulations for Section 7 implementation and we expect to address initiation in those regulations.

Non-biological factors which can affect initiating a critical habitat determination include available funding and staffing necessary to evaluate biological information, assess impacts, and administer responsibilities (i.e., consultations) associated with the habitat. Although not a criterion, knowledge of present and planned Federal agency actions impacting the area is an important consideration in initiating a determination of critical habitat. If a Federal agency action will destroy or modify habitat of an endangered or threatened species, NMFS will initiate an investigation of that habitat to the extent practical and feasible, for possible designation as critical habitat.

Q. 1.2 What regulatory and administrative criteria are used in determining the critical habitat of a threatened or endangered species? To what extent, if any, are non-biological factors considered?

A. Administrative criteria for critical habitat determinations are contained in the informal "Guidelines to Assist Federal Agencies in Complying with Section 7 of the Endangered Species Act of 1973" (copy attached) which were developed by NMFS and FWS in conjunction with other Federal agencies. The Director will consider the physiological, behavioral, ecological, and

evolutionary requirements for the survival and recovery of listed species in determining what areas or parts of habitat are critical (exclusive of those existing manmade structures or settlements which are not necessary to the survival and recovery of the species). Administrative criteria for determining critical habitat include, but are not limited to the species' requirements for: (1) space for individual and population growth and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, or rearing of offspring, and, generally, (5) habitats that are protected from disturbances or are representative of the geographical distribution of listed species. A procedural requirement in determining critical habitat is the exchange of biological information with the affected States and Federal agencies with jurisdiction over the lands or waters under consideration before publishing a proposed determination in the Federal Register, except in emergency situations.

An emergency situation exists when the Director finds that an impending action poses a significant risk to the well-being of a listed species by the destruction or adverse modification of its habitat. In emergency situations, the Director may determine critical habitat (effective for not more than 120 days) without full review of all requirements for survival or recovery of the species. Criteria used in determining critical habitat are expected to be published in the Section 7 final regulations.

Q. 1.3 What provision is made for private individuals to either petition NMFS for a determination that an area constitutes critical habitat or appeal a determination that an area constitutes critical habitat?

A. NMFS has not published a procedure for the public to petition or appeal critical habitat determinations. However, private individuals, States, Federal agencies, and/or other interested parties may submit biological information helpful in determining critical habitat. NMFS will address petitions to list or delist critical habitat in the same manner that we address petitions to list or delist species (ref. Sec. 4(c)(2) of the Act). Accordingly, petitions should be accompanied by substantial evidence warranting a determination.

When the Director has received information he deems sufficient to support a determination of critical habitat, he will publish a proposed determination.

Q. 1.4 How many written requests have been received by NMFS that a specific area be designated as critical habitat under the Act? With respect to each such request, please state:

- (a) the species and area concerned;
- (b) the person making the request (Federal or State agency; private individual or organization);
- (c) whether the request contained sufficient information to make a proposal for designation of critical habitat;
- (d) the present status of the request.

A. Only one written request has been received by NMFS to designate critical habitat:

- (a) Hawaiian monk seal (Monachus schauinslandi): Leeward Islands of Hawaii (beaches used for breeding and pupping, inner reef waters, and surrounding waters out to 3 miles);
- (b) Marine Mammal Commission;
- (c) although the request did contain much valuable information, it was not sufficient to support a determination of critical habitat;
- (d) The National Marine Fisheries Service is developing additional supportive information and assessing environmental impacts of determining critical habitat for the Hawaiian monk seal. Study is underway concerning the extent to which waters outside the reef line of certain islands are critical habitat for the species.

Q. 1.5 How many consultations with States have been initiated by NMFS concerning possible proposals for designation of a specific area as the critical habitat of a protected species?

A. The National Marine Fisheries Service has initiated consultations with two States concerning possible designation of critical habitat.

The National Marine Fisheries Service has informally discussed the Hawaiian monk seal possibility with Hawaii.

The National Marine Fisheries Service has also discussed the possibility of designating critical habitat for the leatherback sea turtle (Dermochelys coriacea) with the Virgin Islands. On its own initiative, NMFS is considering the designation of a portion of beach and adjacent waters on St. Croix Island as critical habitat.

Q. 1.6 How many proposals of critical habitat have been published by NMFS in the Federal Register for public comment? For each such proposal please state:

- (a) the species and area concerned;
- (b) whether the proposal was initiated by NMFS or in response to a request;
- (c) the date and Federal Register citation of the proposal;
- (d) the date of final action, if any, on the proposal.

A. None.

Q. 1.7 How many final determinations of critical habitat have been made by NMFS? For each such determination, please state:

- (a) the species and area concerned;
- (b) the date of determination;
- (c) the respective amounts of land owned by Federal, State and local agencies and private individuals which were encompassed by the designation;
- (d) the number and type of any Federal projects modified or delayed as a result of such designation;
- (e) the number and type of Federal leases, contracts or permits concerning Federal lands (e.g., timber, mineral, grazing), if any, effected by the determination.

A. None.

Q. 1.8 For each determination described in 1.7 which encompassed lands owned by nonfederal entities please state:

- (a) whether the owner or owners were notified of the proposed designation;
- (b) whether the owner or owners objected to the designation;
- (c) whether any compensation was requested by the owner or owners as a result of the designation;
- (d) how much compensation, if any, was paid to the owner or owners as a result of the designation;
- (e) the steps, if any, taken to acquire or purchase the lands, or interests therein, encompassed by the determination which were not within the jurisdiction of a Federal agency at the time of the determination;
- (f) the steps, if any, taken to protect the nonfederally owned lands from nonfederal actions harmful to the critical habitat concerned.

A. Not Applicable.

Q. 1.9 Please provide a summary of each lawsuit arising from a proposed or final determination of critical habitat under Section 7 of the Act including information concerning the identity of plaintiffs and defendants; the legal issues raised; the Federal activity and geographical area involved; the disposition, if any, of the legal issues; the resulting delay, if any, in implementing the Federal action involved; and the present status of the case.

A. Not Applicable. No critical habitat has been proposed or finalized for marine species under NMFS jurisdiction.

Q. 1.10 In his Environmental Message of May 23, 1977, President Carter stated that: "... I am directing the Secretaries of Commerce and Interior to coordinate a Government-wide effort, as required by the Endangered Species Act of 1973, to identify all habitat under Federal jurisdiction or control that is critical to the survival and recovery of (threatened and endangered) species." What steps have you taken, and plan to take, to comply with this direction? What criteria will be used in establishing priorities for determining critical habitat under this direction? When will all such habitat be identified?

A. The National Marine Fisheries Service is developing guidelines with the Department of the Interior to aid in the identification of habitat critical to the survival and recovery of endangered or threatened species. The National Marine Fisheries Service is designating a responsible official in each region to work with Federal agencies and the States on the identification and protection of critical habitat for marine species.

Available information, feasibility of administering and managing areas as critical habitat, degree of endangerment, and native versus foreign species,

are criteria used in establishing priorities for determining critical habitat under the President's direction.

The National Marine Fisheries Service is currently working with the Fish and Wildlife Service on timetables for identifying critical habitat. The timetables will be based, in part, on an assessment of the manpower and funding requirements for identification of such habitat.

Q. 1.11 To what extent will NMFS determine the critical habitat for those species under its jurisdiction presently listed as threatened or endangered? When will these determinations be completed? For each species, if any, that will not have its critical habitat determined please state:

- (a) the species;
- (b) the reason or reasons why the critical habitat of that species will not be designated.

A. National Marine Fisheries Service has jurisdiction over 14 presently listed species (8 large whales, 2 seals, 3 sea turtles, and 1 fish).

Three endangered whales are currently being studied. In conjunction with those studies, critical habitats of these whales will be better understood. The duration of the studies are as follows:

Bowhead whale - intensive investigations to be completed by 1982.

Humpback whale- moderately intensive long-term investigations to be completed in 5-10 years.

Gray whale - low intensity investigations to be completed in 5-10 years.

The gray whale habitat is more restricted than other whales since it migrates within several miles from shore and spends the summer off the west coast of the United States and Canada.

Habitat for Hawaiian monk seal is being considered; however, a final determination is not expected before the summer of 1978.

The habitats of six species of sea turtles are currently being investigated by NMFS. These species are the endangered leatherback, Atlantic ridley, and hawksbill sea turtles and the proposed threatened green, loggerhead, and Pacific ridley sea turtles. The National Marine Fisheries Service is investigating a St. Croix beach as critical habitat for the leatherback turtle in cooperation with FSW and the Virgin Islands government. Studies are currently underway to determine critical habitat of the hawksbill in the Virgin Islands and Puerto Rico.

In anticipation that the other three sea turtles will be listed as threatened, studies are currently underway to determine their critical

} habitats. Considering their wide geographical ranges and present funding, review of habitat requirements for these species probably will not be completed for 5 to 10 years.

Critical habitat may not be designated for some endangered whales, due to their pelagic nature and general world-wide distribution throughout the high seas.

Critical habitat for the Mediterranean monk seal will not be designated because it is not found in U.S. waters or in the high seas.

Since there is no known nesting beach in U.S. jurisdiction for the Atlantic ridley, we do not plan to designate a critical habitat for this species.

No funds are currently available to determine habitat requirements of the shortnose sturgeon. If the shortnose sturgeon recovery team sponsored by the NMFS makes recommendations for studies, we shall consider them in future budget requests.

Q. 1.12 Please estimate the time and cost to NMFS of determining critical habitat for the species described in 1.11.

|                    |            |  |                |
|--------------------|------------|--|----------------|
| A. Bowhead whale   | 5 years    | \$55K<br>\$175K<br>Funding level continued<br>\$40K/year | FY 77<br>FY 78 |
| Humpback whale     | 5-10 years |  |                |
| Gray whale         | 5-10 years | \$10K/year   |                |
| Hawaiian monk seal | 1-2 years  | \$90K  |                |
| Sea turtles        | 3-10 years | \$400K-\$785K  |                |

The cost of determining the habitat characteristics for all species of turtles on a global scale is estimated to be \$785K. This study would probably span 10 years. However, sufficient information should be available within the next few years to determine which habitats are critical for population survival for endangered or threatened sea turtles found in the United States. The cost to complete this work is estimated at \$400K.

## 2. Destruction or Modification of Critical Habitat.

Q. 2.1 Section 7 of the Act requires all Federal agencies to ensure that their actions do not result in the "destruction or modification" of critical habitat. What regulatory or administrative criteria are used by NMFS to determine whether or not Federal actions would result in the destruction or modification" of critical habitat?

A. The National Marine Fisheries Service and the Fish and Wildlife Service (FWS) jointly developed informal guidelines (copy enclosed) for use by other Federal agencies in avoiding "destruction or modification of critical habitat" and "jeopardizing the continued existence" of protected species. These guidelines will be replaced by final regulations currently being developed jointly by NMFS and FWS. (A copy of the proposed regulations published by NMFS on January 26, 1977, is enclosed).

The guidelines contain general criteria for determining if consultation should be initiated. A threshold examination will be conducted and if it is determined that there is a problem then a formal consultation involving a complete biological opinion will be initiated.



The National Marine Fisheries Service and FWS will render biological opinions (a result of consultation) as to destruction, modification, or jeopardy. It is then up to the other Federal agency to decide whether or not to take, continue, or modify action. Federal agencies run the risk that legal action would be brought on the grounds that their agency action violates Section 7.

Q. 2.2 What steps have NMFS taken to ensure that the criteria described in 2.1 are consistent with those used by other Federal agencies?

A. Consistency was insured by developing these criteria jointly with FWS and in cooperation with other Federal agencies.

Q. 2.3 What plans, if any, do you have to modify the criteria described in 2.1?

A. Not applicable.

Q. 2.4 How many actions authorized, funded or carried out by Federal agencies in Fiscal Year 1977 might result in the "destruction or modification" of critical habitat under the criteria described in 2.1?

A. We are not aware of any actions by Federal agencies in FY 1977 which might result in the "destruction or modification" of critical habitat. No critical habitat for marine species has been designated.

### 3. Jeopardy of Species.

Q. 3.1 Section 7 of the Act requires all Federal agencies to ensure that their actions do not "jeopardize the continued existence" of protected species. What administrative and regulatory criteria are used by NMFS for determining whether or not Federal actions "jeopardize the continued existence" of protected species?

A. The administrative and regulatory criteria for determining whether Federal actions jeopardize the continued existence of protected species have been addressed in the informal guidelines and regulations referred to in 2.1 above.

Q. 3.2 What steps have NMFS taken to ensure that the criteria described in 3.1 are consistent with those used by other Federal agencies?

A. Consistency was insured by developing these criteria jointly by FWS and in cooperation with other Federal agencies.

A. Not applicable.

Q. 3.3 What plans, if any, do you have to modify the criteria described in 3.1?

A. Not applicable.

Q. 3.4 How many actions authorized, funded or carried out by Federal agencies in Fiscal Year 1977 might "jeopardize the continued existence" of threatened or endangered species under the criteria described in 3.1?

A. We are not aware of any actions funded or carried out by Federal agencies in FY 1977 which might "jeopardize the continued existence" of threatened or endangered marine species. However, new information may indicate that some ongoing or planned Federal actions fit in this category. The following examples come from our Southwest regional office. Continued operation of Coast Guard and U.S. Navy facilities in the Leeward Islands of Hawaii may result in shifts in density of Hawaiian monk seal populations on certain islands. Operation of Sea-Flite hydrofoils between the major Hawaiian islands of Maui, Oahu, and Molokai; establishment of an underwater observatory at McGregor Point, Maui; may result in disruption of migration and breeding behavior patterns of humpback whales. Development of a super tanker port at Palau may result in adverse impacts on sea turtles or other protected species. Development of Outer Continental Shelf lease tracts off Southern California may disrupt migratory patterns and behavior of gray whales. Whether any of these actions would "jeopardize the continued existence" of protected species cannot be determined due to the limited amount of information available at this time.

Q. 3.5 To what extent do the criteria described in 2.1 and 3.1 overlap or conflict? How many of the actions identified in your answer to 2.4 are the same actions identified in 3.4?

A. The responses in 2.1 and 3.1, as well as 2.4 and 3.4, overlap completely.

#### 4. Consultation with Federal Agencies.

Q. 4.1 Section 7 of the Act requires that all Federal agencies consult with the Secretary concerning actions which might jeopardize the continued existence of a protected species or destroy or modify its critical habitat. How many such consultations were initiated in Fiscal Year 1975, 1976 and 1977?

The National Marine Fisheries Service does not have a complete tabulation of every specific instance of Federal agency review or consultation for possible impact on endangered or threatened species. While we review Federal agency actions in our fish and wildlife coordination activities, we have not uniformly maintained separate records for consultations involving endangered species.

The National Marine Fisheries Service involvement under Section 7 is small by comparison with that of FWS, due primarily to the number of listed marine species (we are responsible for 14 species and FWS is responsible for over 600), the fact that most Federal actions affect land or freshwater areas, and the fact that NMFS has not yet designated any critical habitat. For example, in the Southeast regional office of NMFS (where separate data have been kept) the number of consultations initiated in 1975, 1976, and 1977 was 0, 3 and 18 respectively. Thirteen were with the U.S. Army Corps of Engineers, 3 were with the Bureau of Land Management, and 5 with the Office of Coastal Zone Management.

Q. 4.2 What is your estimate of the number of the consultations described in 4.1 which will be initiated in Fiscal Year 1978?

A. Although there is no sound basis for estimating this since consultations will depend on other Federal agency action, we estimate 50 or more consultations may be initiated in FY 1978.

Q. 4.3 To what extent were the consultations described in 4.1 accomplished in conjunction with consultations required under other laws? Please identify any of these other consultation requirements.

A. Most consultations were accomplished in conjunction with requirements of the Fish and Wildlife Coordination Act and the National Environmental Policy Act.

Q. 4.4 What was the average time taken to complete a consultation under section 7 of the Act in FY 77?

A. In the Southeast Regional Office, the average time taken to complete each consultation was 2 man-days. In the Southwest Regional Office, the average time involved was one week.

Q. 4.5 When will final regulations concerning consultations under section 7 be issued?

A. Publication of final regulations is expected during the fall of 1977.

Q. 4.6 How many interagency conflicts have arisen during consultations under section 7?

A. No interagency conflicts have arisen during consultations.

Q. 4.7 For each interagency conflict identified in 4.6 not resolved successfully during the consultation process, please state:

- (a) the agency and project involved;
- (b) the nature of the conflict;
- (c) a detailed account of agency efforts to resolve the controversy;
- (d) the present status of the conflict.

A. Not applicable

Q. 4.8 What benefits to protected species have accrued as a result of the consultation requirement in section 7? (Please identify specific instances of benefits.) What other benefits, if any, have accrued?

A. Some of the benefits to protected species include protection of female sea turtles while nesting on beaches and protection of eggs and hatchlings. Specific instances of benefit involve beach nourishment projects at Jupiter Island and Fernandina Beach on the east coast of Florida. In the case of Jupiter Island, sea turtle eggs were transplanted to keep them from being buried too deep for survival. On Fernandina Beach, restoration of the beach will restore areas suitable for turtle nesting.

The U.S. Geological Survey and the Department of the Navy had planned to conduct seismic operations in habitat important to whales in arctic waters. However, their operations were cancelled after objection by NMFS.

Q. 4.9 What will be the total costs incurred by NMFS in FY 1978 as a result of the consultation requirements of section 7 of the Act?

A. The Southeast Region cost to consult with other agencies concerning section 7 in 1978 is estimated at \$10,000. The National Marine Fisheries Service consultation costs in other regions have not been estimated.

5. National Environmental Policy Act.

Q. 5.1 We are informed that to date NMFS has implemented section 7 of the Act without benefit of either a programmatic or specific environmental impact statement under the National Environmental Policy Act. Is this correct?

A. Yes.

Q. 5.2 Will environmental statements be prepared for future actions under section 7? If so, for which proposed actions do you plan to prepare a statement?

A. Possibly, it will depend upon the particular actions and the resulting effects on the human environment. The designation of critical habitat for the Hawaiian monk seal may very well require a specific environmental impact statement.

Q. 5.3 Why have environmental statements not been prepared and considered in connection with: the listing of species as threatened or endangered; the designation of critical habitat, and, the program in general?

A. The National Marine Fisheries Service has considered the need for environmental statements in connection with listing species and designating critical habitat. The National Marine Fisheries Service published a draft environmental impact statement on the proposed listing of green, loggerhead, and Pacific ridley sea turtles as threatened species and has drafted a final statement to assess the impact of draft final regulations to list these species.

Q. 5.4 Please provide a summary of any lawsuit arising from the failure of NMFS to prepare and consider an adequate environmental impact statement in connection with its implementation of section 7 of the Act.

A. No such lawsuit has been brought against NMFS to date.

6. General.

Q. 6.1 Are additional legal authorities needed to identify the critical habitat of threatened or endangered species in a timely manner? Please describe any needed authority and the reasons why this authority is needed.

A. No.

Q. 6.2 Are additional legal authorities needed to protect the habitat of

threatened or endangered species from the actions of;

- (a) Federal agencies?
- (b) State agencies?
- (c) private individuals or corporations?

Please describe any needed authority and the reason why this authority is needed.

A. No.

Q. 6.3 To what extent have the requirements of section 7 of the Act been applied to Federal actions beyond the geographical jurisdiction of the United States?

A. There have been none if geographical jurisdiction is meant to include the Continental Shelf. Several outer Continental Shelf drilling or development leases off the California coast were reviewed for possible impact on endangered species (potential conflict with the migration routes of gray whales).

Q. 6.4 What progress in restoring threatened and endangered species has been made as a result of section 7 of the Act?

A. This is answered in part in our reply to 4.8. Restoration of eroded beaches that historically have been used as nesting sites, such as Fernandina Beach, will aid in the restoration of threatened and endangered species. However, it is too early in the program to measure success.

Q. 6.5 Please describe those classes of Federal actions which pose the greatest dangers to the continued existence of threatened and endangered species and their critical habitat and identify the agencies taking such actions.

A. We believe leasing offshore areas for oil, gas, and mineral exploration and development by the Bureau of Land Management, Department of the Interior, presently poses the greatest danger to the endangered whales and their habitat, either (1) by affecting whales directly as a result of vessel traffic, seismic exploration, and hydrocarbon pollution, or (2) by causing adverse impacts on their food chain. Another potential danger is posed by U.S. Geological Survey and Department of the Navy seismic operations in habitat important to whales. Offshore development and oil spills pose problems for sea turtles and other marine species.

Port development and resource, modification under Federal permits, including navigation and harbor works under Army Corps of Engineers permits, and continued operation of existing Federal facilities such as Coast Guard and Navy facilities in the Leeward Hawaiian Islands and the Navy missile range on San Miguel Island, California, pose additional dangers.

Any Federal action that permits destruction of nesting beaches or alters the beach environment so that sea turtles will no longer nest there, or alters them to the extent that eggs will not hatch properly or hatchlings will not proceed to the sea, poses a problem to endangered sea turtle populations. The agency responsible for such action is the Army Corps of Engineers. The Corps has become increasingly aware of the importance of protecting nesting beaches, and as such is likely to comply fully with NMFS recommendations to protect critical habitat.

The Corps of Engineers is also the principal agency responsible for dredging the Hudson River, Kennebec River, and other habitat of the shortnose sturgeon. Destruction of spawning grounds could pose a serious threat to this species.

Q. 6.6 Section 7 of the Act directs the Secretary of Commerce to utilize programs administered by him in furtherance of the purposes of the Act. Which such programs have been utilized most often in protecting the critical habitat of threatened or endangered species? Please describe the extent to which these programs have been so used. To what extent, if any, could these programs be strengthened to further protect critical habitat?

A. The National Marine Fisheries Service conducts research on whales and their habitat to better understand the biology of the whales and to monitor rates of recovery of endangered whales. Through the Fish and Wildlife Coordination Act and other Acts, NMFS reviews and provides recommendations on a variety of permit applications and environmental impact statements for projects that could impact habitat of endangered species. It also prepares environmental assessments and recommends marine sanctuaries under the Marine Protection, Research, and Sanctuaries Act.

When we review permit applications for development projects, NMFS considers that the habitat to be impacted may be critical for whales. Onsite investigations are often required during permit review since little or no specific information on habitat is available for many areas such as Alaska. To be fully effective in protecting the environment, including habitat critical to whales, NMFS will require program expansion.

The marine turtle program currently being undertaken by NMFS is aimed at returning all endangered or threatened sea turtles to a non-endangered or threatened status. In view of the recent signing of the Memorandum of Understanding between NMFS and FWS, it is planned that the NMFS program will be coordinated with FWS turtle studies. Additional funding will be required for this program if endangered turtle species throughout the United States are to be covered (currently only those sea turtles prevalent in the southeastern portion of the United States are being addressed).

In cases where a federally constructed or permitted project could affect important habitat of threatened or endangered species, NMFS recommends measures to prevent adverse impact. The program could be strengthened with increased research efforts designed to identify and quantitatively document the geographical location and extent of critical habitat.

Q. 6.7 What procedure would provide the best mechanism for assessing and resolving any conflicts that might arise between the preservation of critical habitat and other national goals? Why is this procedure preferred over other alternatives?

A. The consultation process to be formalized in upcoming regulations is believed to be the best procedural mechanism for assessing and resolving conflicts. This procedure is preferred over similar existing Federal agency review procedures because endangered species deserve special consideration and added protection from adverse actions.

Q. 6.8 What recommendations, if any, do you have to strengthen or improve section 7?

A. The National Marine Fisheries Service believes that section 7 offers sufficient latitude through the consultation process to remedy problems which may arise. Consultation properly utilized should preserve the interest of the species in question and allow alternatives for the initiating Federal agency.

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICEP.O. Box 2417  
Washington, D.C. 20013

2630

NOV 8 1977



✓ Honorable Robert L. Leggett  
Chairman, Subcommittee on Fisheries and  
Wildlife Conservation and the Environment  
Committee on Merchant Marine and Fisheries  
House of Representatives  
L Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed is a detailed response to your letter of July 27  
concerning administration of Section 7 of the Endangered  
Species Act of 1973.

If you wish clarification to any portion of the response,  
we will be pleased to elaborate on any points in question.

Sincerely,

JOHN R. MCGUIRE  
Chief

Enclosure



1. Critical Habitat Determinations.

1.1 What regulatory and administrative criteria are used by the U.S. Forest Service (Service) in determining whether or not it will request a determination of critical habitat on lands within its jurisdiction? To what extent, if any, are non-biological factors considered?

By memorandum of the Chief dated June 13, 1975, Regional Foresters and Directors of the Forest Service were directed to initiate the identification of critical habitat areas on National Forest System (NFS) lands (copy enclosed). For the most part, information so gathered has been made available to the Fish and Wildlife Service (FWS) through the Recovery Team process or upon request of the FWS preparatory to promulgating a rulemaking. Instructions were reissued and revised subsequent to the President's May 23, 1977, memorandum.

Non-biological factors are not considered in the identification of potential critical habitat, termed essential habitat pending formal determination by the FWS.

1.2 How many written requests have been sent by the Service that a specific area be designated as critical habitat under the Act? With respect to each such request, please state:

- (a) the species and area concerned;
- (b) the date of the request;
- (c) the present status of the request.

One. By letter dated February 19, 1976, the Forest Service requested that several caves on or adjacent to NFS land be designated as critical habitat for the Indiana Bat. The present status is unknown.

1.3 How many final determinations of critical habitat have been made which included lands under the jurisdiction of the Service? For each such determination, please state:

- (a) the species and area concerned;
- (b) the date of determination;
- (c) the amount of land under the jurisdiction of the Service encompassed by the designation;
- (d) the number and type of any Federal projects modified or delayed as a result of such designation;
- (e) the number and type of Federal leases, contracts, or permits concerning lands under the jurisdiction of the Service (e.g., timber) if any, effected by the determination.

Final determinations of critical habitat for endangered or threatened species have been promulgated for two species occurring on NFS lands: the California Condor and Indiana Bat.

California Condor

- (a) nine areas within or near the Los Padres National Forest;
- (b) September 24, 1976;
- (c) 250,000 of 590,000 acres;
- (d) two water resource management dams were delayed and then abandoned while the ruling was pending;
- (e) 26 oil and gas leases have been modified by stipulations that protect the critical habitat by requiring directional drilling or other restrictions on surface occupancy. Not all are presently active.

Indiana Bat

- (a) Hellhole Cave, Monongahela National Forest, West Virginia;
- (b) September 24, 1976;
- (c) the cave is on private land within the Forest boundary;
- (d) no Federal projects affected;
- (e) no leases, contracts, or permits affected.

1.4 In his Environmental Message of May 23, 1977, President Carter stated that: ". . . I am directing the Secretaries of Commerce and Interior to coordinate a Government-wide effort, as required by the Endangered Species Act of 1973, to identify all habitat under Federal jurisdiction or control that is critical to the survival and recovery of (threatened and endangered) species." When will all such habitat on lands within the jurisdiction of the Service be identified? Please estimate the time and cost of determining this critical habitat.

In a memorandum dated September 1, 1977, to Regional Foresters, the Deputy Chief directed that potential critical habitats for most species now listed be identified by September 1, 1978 (copy enclosed).

The Forest Service believes that it may not be possible at this time due to insufficient information to determine the critical habitats of some species. Reasons for not determining critical habitat are that viable populations cannot be located (Bachman's Warbler or Rocky Mountain Wolf), or that the critical habitat concept is not vital to the survival and conservation of the species (American Alligator).

An estimate of the time of determining critical habitat is an average of one-half man-year per species, but this will vary widely by species because of varying complexity of ecological requirements, distribution, and available information.

## 2. Destruction or Modification of Critical Habitat.

2.1 Section 7 of the Act requires all Federal agencies to ensure that their actions do not result in the "destruction or modification" of critical habitat. What regulatory or administrative criteria are used by the Service to determine whether or not its actions would result in the "destruction or modification" of critical habitat?

Since Forest Service actions within critical habitat would affect different species in various ways, there can be no one set of regulatory or administrative criteria to assure that "destruction or adverse modification" does not occur. Criteria are established for each individual species based on the biological requirements of that species.

All projects affecting NFS lands are analyzed to determine their effects on threatened and endangered species and habitats during environmental analysis of the project. Information and formal consultation, when involved in this evaluation process, are used to assist in determining whether or not project action would result in the destruction or modification of critical habitat.

The effects of the project are evaluated using wildlife biologists within the Forest Service, FWS, and State wildlife agencies. In some cases, other biologists from universities, etc., with expertise are also utilized to obtain opinions on the effects of the project on the affected species. If, in their opinion, the action indicates adverse effects, the proposal is modified to eliminate the adverse effects or else the action is deferred.

Information is presented on the occurrence and habitat requirement of each endangered and threatened species in National Forest Land Use plans. Information used is the best available; however, scientific habitat information on some species is lacking.

Examples of administrative criteria established for protecting critical habitat of the California Condor are:

1. Locate and plot nest sites on a map throughout the year.
2. Restrict the area with a one and a half-mile radius of these sites to any motorized activity and blasting.
3. Prohibit all public use within the established Condor sanctuaries.
4. Locate and plot main roosting and bathing areas on the nest map.
5. Eliminate human activity within a half-mile of roosting and bathing sites.
6. Locate trails and trail camps out of the direct "line-of-site" within one-half mile minimum of all nest and roost sites where deemed necessary for adequate protection of the nest site.
7. Work with the FAA to enforce prohibition of military and civilian aircraft use below 3000 feet elevation over the Condor critical habitat.

The Grizzly Bear provides an example of protecting occupied habitat not classified as critical habitat. In March 1977, the Forest Service developed a scientific process titled, "A Method for Determining Grizzly Bear Habitat

Quality and Estimating Consequences of Impacts on Grizzly Bear Habitat Quality." The purpose of this process was to design a reliable method of evaluating the impact of other resource activities and presenting viable modifications. Field application will start in FY 1978. Reviews of the method by recognized authorities and other agencies with Grizzly Bear responsibilities will soon be completed and the final draft will be presented this fall.

2.2 What steps have the Service taken to ensure that the criteria described in 2.1 are consistent with those used by other Federal agencies?

Under the law the Forest Service is not compelled to ensure that the criteria for managing critical habitats are consistent with those used by any other Federal agency. The courts have determined that each agency is ultimately responsible for its own actions and for the effects of such actions on listed species and their habitats.

As a matter of course, however, Forest Service criteria, plans, and guidelines for management of listed species and their occupied habitats are developed in consultation with and with advice of other agencies, the States and private parties concerned with the conservation of the species. In this way, the Service has developed and implemented land management programs and practices for the protection and benefit of several species in advance of the critical habitat determinations by the Secretary of the Interior.

Management guidelines are in effect for such species as the Southern Bald Eagle, Red-cockaded Woodpecker, Mississippi Sand Hill Crane, American Peregrine Falcon, Blunt-nosed Leopard Lizard, and others.

2.3 What plans, if any, do you have to modify the criteria described in 2.1?

The Forest Service is preparing new direction which will require each species affected by Forest Service Programs or jurisdiction to assure that actions funded, permitted, or carried out by the Forest Service are in compliance with Section 7. The purpose is to identify and describe normal or routine practices affecting listed species, to develop, review, and adopt standard measures for avoiding or removing in routine practice, any such harmful effects, to isolate those which cannot be avoided, and to review the efficacy of such measures with concerned State, Federal, and private organizations, as appropriate. The plans will serve as the primary document for consultation with FWS. Non-routine programs or activities will be individually assessed for impacts on endangered species.

2.4 How many actions authorized, funded, or carried out by the Service in Fiscal Year 1977 might result in the "destruction or modification" of critical habitat under the criteria described in 2.1?

None. No actions authorized, funded, or carried out by the Forest Service in FY 1977 are known to threaten the destruction of critical habitat.

### 3. Jeopardy of Species.

3.1 Section 7 of the Act requires all Federal agencies to ensure that their actions do not "jeopardize the continued existence" of protected species. What administrative and regulatory criteria are used by the Service for determining whether or not its actions "jeopardize the continued existence" of protected species?

These are the same as those described in item 2.1.

As noted above, the Forest Service plans to prepare comprehensive species management plans for all threatened or endangered species occurring on NFS lands. Until a management plan for a species is approved, all activities and programs will be evaluated for potential impacts on threatened or endangered species. A typical review sequence is divided into four parts: (1) Pre-field investigation and coordination, (2) Field investigation, (3) Evaluation, (4) Biological recommendations.

In the pre-field stage, the process is to: (1) Describe the project, (2) Describe habitat conditions and biological requirements of the species, and (3) Document information sources and coordination completed in determining relationships between the activity and potential effects on listed species or habitat. At this point, if available information is sufficient to make a determination of effect, proceed to the Evaluation section. If it is insufficient, initiate a field investigation.

In the field investigation stage, the process is: (1) Describe methods for field reconnaissance or study, the rationale for the methods, and key to a suitable map, (2) Describe the results of field investigation stating whether listed species are present, and present biological findings. At this point, if information is still not sufficient, either further study or formal consultation with FWS or National Marine Fisheries Service (NMFS) is initiated. If information is sufficient to make a determination, proceed to the evaluation stage. In the evaluation stage, the potential effects of each project alternative on listed species or their habitat is discussed.

Following evaluation of project effects, biological recommendations are presented for project modification to alleviate potential impacts or to enhance the preservation and recovery of the species. Recommendations are made by a competent professional and approved by the line officer with authority to approve the project.

3.2 What steps has the Service taken to ensure that the criteria described in 3.1 are consistent with those used by other Federal agencies?

Same as item 2.2.

3.3 What plans, if any, do you have to modify the criteria described in 3.1?

Same as item 2.3.

3.4 How many actions authorized, funded, or carried out by the Service in fiscal year 1977 might "jeopardize the continued existence" of threatened or endangered species under the criteria described in 3.1?

No actions authorized, funded, or carried out by the Forest Service in fiscal year 1977 will result in jeopardizing the continued existence of threatened or endangered species.

3.5 To what extent do the criteria described in 2.1 and 3.1 overlap or conflict? How many of the actions identified in your answer to 2.4 are the same actions identified in 3.4?

It is difficult in practice to discern between the two. Criteria under 2.1 and 3.1 are consistent. We use basically the same procedure described under 3.1 to establish criteria for management of an individual species as for critical habitat under 2.1. The second part of this question is not applicable.

#### 4. Consultation with Federal Agencies.

4.1 Section 7 of the Act requires that all Federal agencies consult with the Secretary concerning actions which might jeopardize the continued existence of a protected species or destroy or modify its critical habitat. How many such consultations were initiated by the Service in fiscal year 1975, 1976, and 1977?

There were no formal consultations in FY '75 or '76. The Forest Service made five requests to initiate formal consultation in FY 1977. Two are completed, two are pending, and one was denied on the grounds that the species was not yet listed. There have been perhaps 1,100 informal consultations over the three years in question.

4.2 What is your estimate of the number of the consultations described in 4.1 which will be initiated by the Service in fiscal year 1978?

When regulations defining the consultation process become final, we expect the number of formal consultations to increase substantially over the present rate. Perhaps 150-200 is a fair estimate, provided the species management plans governing routine practices affecting listed species prove acceptable to the FWS. Informal consultations may number 800-1,000 per year. The latter are difficult to define and record since they range from telephoned contacts to office appointments, and NEPA process reviews of Environmental Impact Statements.

4.3 To what extent were the consultations described in 4.1 accomplished in conjunction with consultations required under other laws? Please identify any of these other consultation requirements.

Land Use Plans are sent to FWS for review in keeping with NEPA process. However, unless specifically identified as such, FWS does not consider this to be "consultation" under Section 7 guidelines now in effect.

4.4 What was the average time taken by the Service to complete a consultation under Section 7 of the Act in FY '77?

We estimate about 2-3 days turn-around time for informal consultation and, perhaps, 6 months for formal consultation. This is only part of the time factor. It is more difficult to estimate the effort involved in preparation for consultation and in responding to opinions or assistance rendered.

4.5 How many interagency conflicts have arisen concerning the actions of the Service during consultations under Section 7?

No significant interagency conflicts have yet resulted from consultation between the Forest Service and the FWS over the effect of proposed actions on listed species.

The Forest Service has had major philosophical differences, however, with the FWS over the consultation process developed by the latter and published first as guidelines and later as a proposed rulemaking (Federal Register Vol. 42, No. 17, January 26, 1977). Pending satisfactory resolution of these substantive differences, which appears likely in the near future, the Forest Service has not made extensive use of the consultative services of the FWS, hence, the opportunity for conflict has not been great.

4.6 For each interagency conflict identified in 4.5 not resolved successfully during the consultation process, please state:

- (a) the project involved;
- (b) the nature of the conflict;
- (c) a detailed account of agency efforts to resolve the controversy;
- (d) the present status of the conflict.

None.

4.7 What benefits to protected species have accrued as a result of the consultation requirement in Section 7? (Please identify specific instances of benefits.) What other benefits, if any, have accrued?

We can identify no specific benefits to species resulting from consultation. The information most often gathered in the consultation process relates to further knowledge of species' distribution, population size, and habitat requirements. This knowledge has resulted in increased awareness of management opportunities for many species. The principal benefit of consultation is the opportunity to expose planning efforts to a different perspective.

4.8 What will be the total costs incurred by the Service in FY 1978 as a result of the consultation requirements of Section 7 of the Act?

There is presently no basis for estimating cost of formal consultation in FY '78. The cost for informal consultation should be relatively low, perhaps 4-5 man-days or approximately \$500 each. The cost of formal consultations could be several thousands of dollars each if biological studies are required by the FWS in preparing a biological opinion completing a consultation event.

5. General.

5.1 Are additional legal authorities needed to identify the critical habitat of threatened or endangered species on Service lands in a timely manner? Please describe any needed authority and the reasons why this authority is needed.

No.

5.2 Are additional legal authorities needed to protect the habitat of threatened or endangered species on Service lands from the actions of:

- (a) Federal agencies?
- (b) State agencies?
- (c) private individuals or corporations?

Please describe any needed authority and the reason why this authority is needed.

None needed.

5.3 What progress in restoring threatened and endangered species on Service lands has been made as a result of Section 7 of the Act?

This is a difficult question to answer comprehensively and objectively, first, because in terms of species recovery, progress is not always apparent and when it can be demonstrated varies in kind, degree, and rate by the species and the situation, and secondly, because visible progress is not necessarily due to Section 7 or to any of its particular requirements, or even to the Endangered Species Act of 1973, itself.

Demonstrable progress has been made and documented in the recovery of some species such as the Kirtland's Warbler, Eastern Timber Wolf, Paiute Trout, and Lahontan Cutthroat. The downward trend in populations or the loss of habitat for some species has been halted as with the Southern Bald Eagle, Grizzly Bear, Red-cockaded Woodpecker, and Blunt-nosed Leopard Lizard. But, with still other species, a heartening change in neither status nor trend is recognizable in spite of all-out efforts to save the species by the Forest Service, FWS, the States, and other cooperators. Such is the unfortunate truth in the plight of the California Condor, Puerto Rican Parrot, Bachman's Warbler, and Black-footed Ferret.

Where progress is recognizable, it is due as much or more to the positive guidance set forth as national policy in Section 2(c) of the Act as to Section 7: "It is further declared to be the policy of the



Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act."

Congressional direction in Section 2(c) is reaffirmed in the first clause of the second sentence of Section 7. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this Act ... (Emphasis added). Success in the endangered species conservation movement is too often laid to the constraints placed on Federal actions by Section 7. In the long run, success may well depend more on positive initiatives of responsible agencies than upon their reaction to the strictures implied in Section 7.

Progress in the conservation of many species began with programs initiated following the passage of the 1966 Act, even before, in some cases. In this respect, the 1973 Act merely added new emphasis to ongoing efforts in behalf of the Condor, Wolf, Kirtland's Warbler, Red-cockaded Woodpecker, and the Black-footed Ferret, for example. The Forest Service interpreted the 1973 Act, Section 2(c) and 7 as the redirection for existing authorities. As a result, funding for the inventory, protection, research, and recovery of endangered species' habitats is allocated as a line item in the budget for Protection and Management of Resources in the National Forest System and for Forest Service Wildlife Habitat Research. The Forest Service now has ongoing management activities for over 400 species of plants proposed for listing as endangered, yet none of these presently come under the purview of Section 7.

5.4 Please describe those classes of actions which pose the greatest dangers to the continued existence of threatened and endangered species and their critical habitat on Service lands.

The greatest dangers are habitat loss through land use conversion, physical harm, and disturbance of the organism.

Human population expansion infringing on the habitats of threatened and endangered species is a widespread adverse condition. A philosophical attitude which values species only for their immediate human use is a factor which erodes commitment to the objective of retaining these species for their intrinsic values.

Actions which have the greatest inherent potential for jeopardizing the continued existence of threatened and endangered species and their critical habitats on the NFS are:

- Real estate developments on intermingled private lands;
- Intensive or increasing recreation use;
- Timber harvesting and reforestation;

Road building;  
Mineral and energy resource developments;  
Illegal taking;  
Water resource development; and  
Pesticide use and application.

The Forest Service endangered species management program is geared to recognizing threats and to the extent possible, with present knowledge and funding, avoiding the adverse effects of such actions.

Some examples of actions adversely affecting threatened and endangered species are as follows:

(a) Grizzly Bear. Land uses which increase the human/grizzly interactions. These might include road development, increased recreation use and mineral uses. Mountain home subdivisions on private lands are considered to be a serious threat to the Grizzly Bear.

(b) American Peregrine Falcon. Use of chlorinated hydrocarbons and land uses which result in increased human activity around eyrie sites. Illegal taking for falconry is a problem.

(c) Black-footed Ferret. Predator and rodent control programs within occupied habitats, loss of food supply and habitat. The intensive development of farming on the prairie is the major threat to the Black-footed Ferret.

(d) Greenback Cutthroat Trout. Poorly planned logging and road building which results in increased sedimentation and lowering of water quality of occupied waters.

(e) Northern Rocky Mountain Wolf. Predator control programs, primarily designed for the coyote, and believed to be primarily responsible for the decline of the Northern Rocky Mountain Wolf. Some concern has been expressed about declining deer herds and food supplies for the wolf.

(f) Desert Plants and Wildlife. The demands for water in the arid climate continue to foster more dams, canals, and other water manipulations which may well disrupt the remnants of former desert aquatic and riparian habitats. Insidious, almost imperceptible, changes wrought on fragile desert ecosystems by overgrazing, pollutants, and insecticides (an international situation with Mexico next door) may prove to be significant. Illegal taking of cacti and succulents by private citizens from public lands for horticultural purpose is an action difficult and costly to control. The private collection of plants from non-arid areas is critical to the survival of certain rare forms.

(g) Southern Bald Eagle. While pesticide threats to the species have apparently declined, other significant threats remain, including real estate development on intermingled private lands in the South and California, road building, logging, recreation related disturbances, water resource development, and illegal shooting.

5.5 What procedure would provide the best mechanism for assessing and resolving any conflicts that might arise between the preservation of critical habitat and other national goals? Why is this procedure preferred over other alternatives?

Four alternative procedures have been tested or broached in assessing and resolving conflicts between the preservation of critical habitat and other national goals. These are consultation, mediation, judicial review, and congressional relief (proposed). Each may be an appropriate avenue for resolving a particular conflict.

Consultation is the preferred alternative, but it can resolve only apparent conflicts. Consultation, whether between experts in governmental agencies, the Government and the States, or the Government and non-governmental entities, is a viable alternative for resolving endangered species conflicts when applied in good faith and there is reasonable expectation that their combined expertise will lead to a creative solution. Effective consultation depends on adequate information, skill, and some capacity for accommodation between competing national interests. It cannot resolve basic conflicts between national goals which are inherently competitive.

Mediation is appropriate in resolving conflicts between interested parties where interpretation of scientific fact, rather than of legal subtlety is at issue. A case in point is the Bachman's Warbler controversy recently resolved on the Francis Marion National Forest, South Carolina, through the efforts of a panel of scientists, convened at the pleasure of the Forest Supervisor and a potential litigant--the Santee Preservation Society--on the urging of a third party, the National Wildlife Federation. Through this process differences in opinion arising over the interpretation of scientific facts and historical records were resolved through scientific inquiry rather than legal debate. An axiom of wildlife management is applicable here--"While opinions may win debates, natural laws still govern the lives of game animals." The courtroom may not be the most appropriate arena for weighing the validity of scientific arguments and, thereby, assuring species survival.

In resolving conflicts arising over the meaning and application of the Act, the courts are the appropriate arena for settling conflicts. Judicial review is best applied to issues of negligence, defiance, or the interpretation of the Act. It is hoped that the courts would refrain from reviewing scientific issues or those calling for a balancing of national goals.

It is quite possible that in rare instances an otherwise unresolvable conflict between the conservation of a species (not necessarily the preservation of critical habitat) may indeed require the attention of the Congress. This would occur when the purposes of the present Act are pitted against other national goals. The Congress seems to be the appropriate arbitrator of such conflicts.

5.6 What recommendations, if any, do you have to strengthen or improve Section 7?

None. We hope that the apparent problems with Section 7 can be resolved administratively without recourse to congressional action.

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

WO

REPLY TO: 2630 Habitat

JUN 13 1975

SUBJECT: Establishment of "Critical Habitats" for 108  
Endangered Wildlife Species

TO: Regional Foresters, Station Directors, Area Directors



One of the key jobs under the Endangered Species Act of 1973 is the establishment and management of "critical habitats" for threatened and endangered species. The Fish and Wildlife Service is presently in the process of determining "critical habitats" for 108 endangered species. See the Federal Register, Vol. 40, No. 96, Friday, May 16, 1975, for listing of species.

The Forest Service must provide the Fish and Wildlife Service and the States information and recommendations regarding "critical habitats." In doing so, please follow the enclosed guidelines.

Guidelines will be put in the Directive System at a later date.

JOHN R. MCGUIRE  
Chief

Enclosure

Limited Distribution

7. There will be proposed rulemaking for species whose distribution with respect to National Forest System lands will be unclear. In this situation, the WO will assign a lead Region responsibility, based on the States in which the species occurs. The lead Region will determine whether the species is found on National Forest System lands. If so, it will proceed as outlined. If not, follow direction under Section B.
  8. Recommendations for "critical habitats" in this section is limited to habitats that occur on National Forest System lands. Recommendations for "critical habitats" that occur on lands other than National Forest System lands will follow direction under Section B.
  9. There may be threatened or endangered species on National Forest System lands in which "critical habitats" are not present. Where this occurs, the lead Region will provide the WO with this information and rationale behind recommendation. In making this recommendation be sure to follow the broad guidelines as outlined in the Federal Register, Vol. 40, No. 78, Tuesday, April 22, 1975.
- B. For species that do not occur on National Forest System lands, the Forest Service will provide recommendations on "critical habitats" directly to the States. All Regions where the species occurs should take the lead in this effort and coordinate with S&PF and Research prior to providing data to the States. It is expected there will be species in this category in which the Forest Service will not have data on which to make recommendations to the States. This determination should be made by the Regions after consultation with S&PF and Research.

Lead Responsibility Assignments for Developing "Critical Habitat"  
Recommendations for Species Occurring on National Forest System  
Lands Listed in Federal Register, Vol. 40, No. 96, Friday,  
May 16, 1975

Species Reported on NFS LandsLead Responsibility

|                                      |          |
|--------------------------------------|----------|
| 1. Chub, Humpback                    | Region 4 |
| 2. Dace, Kendall Warm Springs        | " 4      |
| 3. Squawfish, Colorado River         | " 4      |
| 4. Stickleback, Unarmored threespine | " 5      |
| 5. Topminnow, Gila                   | " 3      |
| 6. Trout, Arizona (Apache)           | " 3      |
| 7. Trout, Gila                       | " 3      |
| 8. Trout, Greenback cutthroat        | " 2      |
| 9. Trout, Lahontan cutthroat         | " 4      |
| 10. Trout, Paiute cutthroat          | " 4      |
| 11. Woundfin                         | " 4      |
| 12. Alligator, American              | " 8      |
| 13. Lizard, Blunt-nosed leopard      | " 5      |
| 14. Bobwhite, masked                 | " 3      |
| 15. Condor, California               | " 5      |
| 16. Crane, Whooping                  | " 1      |
| 17. Curlew, Eskimo                   | " 2      |
| 18. Duck, Mexican                    | " 3      |
| 19. Eagle, Southern bald             | " 8      |
| 20. Falcon, American peregrine       | " 2      |
| 21. Falcon, Arctic peregrine         | " 9      |
| 22. Goose, Aleutian Canada           | " 6      |
| 23. Parrot, Puerto Rican             | " 8      |
| 24. Pelican, brown                   | " 8      |
| 25. Warbler, Bachman's               | " 8      |
| 26. Warbler, Kirtland's              | " 9      |
| 27. Woodpecker, Ivory-billed         | " 8*     |
| 28. Woodpecker, Red-cockaded         | " 8      |
| 29. Bat, Indiana                     | " 9      |
| 30. Cougar, Eastern                  | " 8      |
| 31. Ferret, Black-footed             | " 2      |
| 32. Fox, San Joaquin kit             | " 5      |
| 33. Manatee, Florida (sea cow)       | " 8      |
| 34. Panther, Florida                 | " 8      |
| 35. Prairie Dog, Utah                | " 4      |
| 36. Wolf, Eastern timber             | " 9      |
| 37. Wolf, Northern Rocky Mountain    | " 1      |
| 38. Wolf, red                        | " 8      |
| 39. GRIZZLY BEAR                     | " 1      |
| 40. CRANE, MISSISSIPPI SANDHILL      | " 8      |

\*Quite possibly extinct--It is doubtful whether Interior will recommend "critical habitat" for this species.

Guidelines for Developing Recommendations  
on "Critical Habitats" of Threatened and  
Endangered Species

Recommendations for the establishment of "critical habitats" will follow the broad direction established under the heading "Endangered and Threatened Species--Notice on Critical Habitat Areas" (Federal Register, Vol. 40, No. 78, Tuesday, April 22, 1975).

Specific guidance to Regions, Areas, and Stations is as follows:

- A. Where the species occurs on National Forest System lands, lead responsibility for Forest Service recommendations on "critical habitats" will be assigned to specific Regions by the WO.
  1. When a species is found in more than one Region, the lead Region will have responsibility for coordination with other Regions.
  2. Regions will coordinate their efforts with the respective States where the species occurs.
  3. The lead Regions will develop maps, where possible or desirable, of proposed critical habitats.
  4. The lead Regions will coordinate their efforts with S&PF and the involved Stations.
  5. Recommendations on kinds of actions that could be prohibited or permitted in "critical habitats" should be in the form of management guidelines rather than specific recommendations on activities such as timber sales, timber stand improvement, etc..
  6. For the 39 species now endangered and found on National Forests, the lead Region should submit to the WO recommendations for the establishment of "critical habitats" prior to the proposed rulemaking in the Federal Register. This may be impossible for certain species; however, this time frame should be our objective.

For species proposed for classification in the future, the Forest Service will only have 60 days from proposed rulemaking in which to comment. This short period is the result of the Department of the Interior's intent to establish "critical habitats" at the time of rulemaking. This will necessitate quick action on the part of the lead Region. Proposals will be sent to the WO.



UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

WO

REPLY TO: 2630 Habitat

SEP 1 1977

SUBJECT: President's Directive on Critical Habitat for  
Endangered Species and Threatened Species  
May 23, 1977

TO: Regional Foresters

REPLY DUE NOVEMBER 1

On May 23, 1977, President Carter issued a memorandum directing the Secretaries of Agriculture, Interior, Commerce, and Defense to accelerate the identification and protection of Critical Habitats for endangered species and threatened species on lands under their jurisdiction and control (copy enclosed).

The WO has contacted the Office of Endangered Species, Fish and Wildlife Service (FWS) to ascertain proposed timetables, criteria, and procedures for implementing this directive; however, the process is uncertain at this time. This memorandum is to alert you to the requirements of the President's directive, establish an interim plan, procedures, and target dates. We will advise you of any revisions necessitated by action forthcoming from FWS.

In summary, the President's memorandum directs the Secretary of Agriculture to:

1. Identify areas under (his) jurisdiction which appear to be (critical habitat).
2. Provide data and information regarding areas so identified to the Secretary of the Interior and/or the Secretary of Commerce.
3. Exercise caution in the modification of such areas and consult with Secretary of the Interior and/or Commerce concerning any proposed modification of such areas.
4. Encourage the States and citizens to assist (him) in identifying areas which appear to be (critical habitat).

The Secretary of the Interior and Secretary of Commerce were directed to:

1. Develop timetables for expeditious implementation of the directive.
2. Provide guidance and cooperation to assure efficient compliance.

### 3. Expedite the determination of critical habitat.

#### SCOPE

The requirements of this memorandum will apply to all wildlife species, both vertebrates and invertebrates, now listed or proposed for listing under any current or subsequent rulemaking published in the Federal Register, and which occur on NFS lands, or for which suitable unoccupied habitat exists on NFS lands. Direction for plant species will be issued later.

#### RESPONSIBILITY

The Regional Forester is responsible for implementing the requirements of this memorandum on lands under his control. Where the range of an endangered or threatened species laps Regional boundaries, Regions should coordinate their efforts to ensure that identified areas, criteria, and protective measures are compatible between Regions. The "lead Region" concept will not be used. For many species, the necessary information is on hand, key areas have been identified, or the key attributes of occupied range are known, management direction has been developed to assure that occupied habitats are protected and, in actual practice, the substantive requirements of the President's directive are already being met.

#### GOAL

The goal is to complete an initial identification of essential habitats of all listed species occupying NFS lands by September 1, 1978, in accordance with the following procedures and priorities.

#### PROCEDURES

##### - Criteria

Forest Service will use the term "essential habitat" to define candidate areas of potential critical habitat pending an official determination of critical habitat by the Secretary of the Interior, Fish and Wildlife Service (FWS), or the Secretary of Commerce, National Marine Fisheries Service (NMFS).

Essential habitat will be identified using the criteria for critical habitat determinations set forth in the proposed rulemaking, Federal Register, Vol. 42, No. 17, page 4875, Subpart C, January 26, 1977 (copy enclosed).

Essential habitat includes both occupied and suitable unoccupied habitat necessary to the protection and recovery of the species.

- Minimum Requirements

The following information on essential habitats will be submitted to the Chief for transmittal to FWS or NMFS:

- . A map of sufficient scale and detail to define the boundaries of identified essential habitat area(s) on or adjacent to NFS lands. Use easily recognized natural or cultural features as boundaries.
- . A written description of the boundaries of each area.
- . The coordinates (latitude and longitude) of the minimum rectangle(s) that would circumscribe the limits of the area(s) identified.
- . Estimated acreage(s) broken down as occupied habitat and suitable unoccupied habitat, by NFS and other ownership. (On "other" ownership include inholdings and lands within one mile of NFS which are identified as essential habitat.)
- . Background - A statement containing relevant biological information, pertinent facts about the area(s), the rationale for identifying the area(s) as essential habitat, and literature citations or key references as appropriate.

- Priority Categories - These refer to all listed species using NFS lands.

1. First category comprises those species or habitats proposed for listing in the rulemaking process.
2. Second category comprises those species for which no Recovery Team has been assigned.
3. Third category comprises species under study by a Recovery Team, but where the FS is not represented on the Team.
4. Fourth category comprises those under study by Recovery Team and where FS is represented on the Team.
5. Fifth category comprises those for which critical habitats have already been determined. The FS may wish to recommend revisions or amendments to the published rules. (You have been furnished copies of all critical habitat rulemakings.)
6. Sixth category includes those species for which the identification of essential habitat is not now feasible. Essential habitat areas will not be identified if, from the biological standpoint, it is clearly inappropriate to do so. Such could be the

case where viable populations cannot be located, or if there is insufficient knowledge of the habitat requirements of the species. In a few cases the critical habitat concept may not significantly relate to the major threats to the species (example, American alligator).

- Due Dates

By November 1, 1977, please provide a complete summary assigning to the above categories all listed or proposed endangered or threatened wildlife species known or suspected to occur on or adjacent to NFS lands. Indicate NF of occurrence.

Subsequently, please provide for each species the information noted under "minimum requirements" according to the following schedule of priorities by category:

Category 1, by the date indicated in the proposed rulemaking, or in relevant correspondence.

Category 2, by March 1, 1978.

Category 3, as needed for Recovery Plan review, but not later than September 1, 1978.

Category 4, as needed for Recovery Plan preparation and review.

Category 5, annually by March 1, as appropriate.

Category 6, as new findings permit, reassign species to above categories and identify essential habitat within six months of reassignment.

CONSULTATION WITH FWS AND NMFS

The President's memorandum directs this be done in consultation with the appropriate Secretary (FWS or NMFS). Until and unless otherwise directed, informal consultation may be conducted with Regional Directors, FWS, or NMFS to ascertain type, extent, and sources of essential information already available and to synthesize, if possible, a working concept of essential habitat for the species. Interim descriptions of essential habitats might be reviewed and exchanged prior to transmittal of formal proposal by the Chief.

CONSULTATION WITH STATE WILDLIFE AGENCIES

The Forest Service will involve State wildlife agencies as full and equal participants in this process.

CONSULTATION WITH CITIZEN GROUPS AND INDIVIDUALS

Consultation and involvement of citizen groups and individuals should be solicited as appropriate in the determination of essential habitat and in the evaluation of activities. Comments received should be documented for the record.

PROTECTION

Essential habitat areas will be protected from adverse modification or destruction pending a formal determination of critical habitat. The need for formal consultation may be indicated to ascertain the effects of proposed activities. Formal consultation may serve to expedite a critical habitat determination or an emergency determination of critical habitat.

If you have any questions or suggestions for revision, please contact William D. Zeedyk, Wildlife Management Staff.

THOMAS C. NELSON  
DEPUTY CHIEF

Enclosures

Pres. Directive  
Critical Habitat (Fed. Reg.)

## PROPOSED RULES

4875

General Environmental Policy Act (42 U.S.C. 4321 et seq.). The satisfaction of requirements of these other statutes, however, does not of itself relieve a Federal agency of its obligation to comply with the consultation procedures set forth in this part.

(b) When particular programs or activities involve more than one Federal agency, these agencies may, with concurrence of the Director, fulfill their consultation responsibilities through a single agency.

#### § 223.13 Assistance from the Service.

It is the primary responsibility of each Federal agency requesting consultation to conduct appropriate studies and to provide the biological information necessary for adequate review of the effect an activity or program has upon listed species or their habitat. To the extent it is able, the NMFS will upon request provide relevant available data and reports, personnel, and recommendations for additional studies or surveys, but the NMFS will not fund any such additional studies or surveys.

#### § 223.14 Assistance from other sources.

Federal agencies may seek assistance from any source to obtain the biological information necessary for review of the effect an activity or program has upon listed species or their habitat. Such assistance may include, but it not limited to that obtained by contract or required by regulations of the Federal agency. The responsibility for compliance with the procedures of this subpart remains with the Federal agency and cannot be delegated by it.

#### § 223.15 Threshold examination.

Upon receipt of a request for consultation, the Director or Regional Director will conduct a threshold examination of the activity or program under review. A threshold examination may include a review of available information or an on-site inspection of the area.

(a) If an activity or program under review will, in the opinion of the Director, promote the conservation of listed species, the appropriate Federal agency shall be notified in writing within 60 days after consultation is initiated, and additional section 7 consultation shall be unnecessary unless it would further benefit the listed species. The NMFS, to the extent feasible, will assist in carrying out such programs if requested by the Federal agency. The Federal agency should be aware that in addition to satisfaction of section 7 requirements, a permit may be required for activities otherwise prohibited by section 9 of the Act (16 U.S.C. 1538).

(b) If an identified activity or program is not specifically for the conservation of listed species, but the Director or Regional Director concludes from the

threshold examination that in no likelihood will the activity or program jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the appropriate Federal agency shall be notified in writing within 60 days of initiation and further section 7 consultation shall be unnecessary.

#### § 223.16 Further consultation.

If an identified activity or program is not specifically for the conservation of listed species, and the Director or Regional Director concludes as a result of the threshold examination that the activity or program may jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat, the Federal agency will be so notified in writing within 60 days of initiation. The Federal agency, with assistance as feasible from the NMFS and other sources of expertise, shall then initiate biological surveys or studies to determine how the activity or program may affect listed species or their critical habitat. Within 60 days of receipt of adequate information and documentation, unless special circumstances require negotiation of a longer period, the NMFS will end consultation by issuing a biological opinion.

#### § 223.17 Biological opinions.

(a) If the Director or Regional Director concludes that an activity or program under review is not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat, he will so notify the Federal agency in writing.

(b) If the Director or Regional Director concludes that an activity or program under review is likely to jeopardize the continued existence of a listed species or result in the destruction or modification of critical habitat, he will so notify the Federal agency in writing and may recommend any changes that in his opinion will eliminate these effects of the activities or programs.

(c) Biological opinions issued pursuant to paragraphs (a) and (b) of this section will be accompanied by a statement of the facts and documentation on which they are based.

(d) Upon receipt and consideration of the final biological opinion and recommendations of the NMFS, it is the responsibility of the Federal agency to determine whether to proceed with the activity or program as planned. In light of its section 7 obligations. Where the consultation process has been consolidated with interagency cooperation required by other statutes, such as the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) or the National Environmental Policy Act (42 U.S.C. 4321 et seq.), the final biological opinion and recommendations of the NMFS should be

stated in the documents required by those statutes.

#### § 223.18 Reinitiation.

Consultation shall be reinitiated by the NMFS or by the Federal agency:

(a) If new information reveals impacts of an activity or program that may hinder the survival and recovery of listed species;

(b) If the activity or program is modified in a manner that may hinder the survival and recovery of listed species; or

(c) If a new species is listed that may be affected by the activity or program.

#### Subpart C—Determination of Critical Habitat

#### § 223.21 Procedure.

Whenever deemed necessary and appropriate, the Director shall determine critical habitat for a listed species. After exchange of biological information, as appropriate with the affected States and Federal agencies with jurisdiction over the lands or waters under consideration, the Director shall publish proposed rulemakings in the *FEDERAL REGISTER*. Comments of the scientific community and other interested persons will also be considered in promulgating final rulemaking.

#### § 223.22 Criteria.

The Director will consider the physiological, behavioral, ecological, and evolutionary requirements for the survival and recovery of listed species in determining what areas or parts of habitat (exclusive of those existing man-made structures or settlements which are not necessary to the survival and recovery of the species) are critical. These requirements include, but are not limited to:

(a) Space for individual and population growth and for normal behavior;

(b) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(c) Cover or shelter;

(d) Sites for breeding, reproduction, or rearing of offspring; and generally,

(e) Ecosystems that are protected from disturbances and are representative of the geographical distribution of listed species.

#### § 223.23 Emergency determination.

Sections 223.21 and 223.22 notwithstanding, the Director may make an emergency determination of critical habitat if he finds that an impending action poses a significant risk to the well-being of a listed species by the destruction or adverse modification of its habitat. Emergency determinations will be published in the *FEDERAL REGISTER* and will remain in effect for no more than 120 days.

[FR Doc. 77-2382 Filed 1-25-77; 8:45 am]

DAEN-CWP-P

17 APR 1978

Honorable Robert L. Leggett  
House of Representatives  
Washington, D.C. 20515

Dear Mr. Leggett:

In response to your recent request I am inclosing a tabulation of the U.S. Army Corps of Engineers water resource projects and permit actions that may impact upon endangered and threatened species or adversely affect their critical habitat. This summary reflects the status of the projects and permit actions as of March 1978.

Please feel free to contact me if you desire additional information.

Sincerely,  
(Signature)

1 Incl  
As stated

DRAKE WILSON  
Brigadier General, USA  
Deputy Director of Civil Works

CORPS OF ENGINEERS PROJECTS AND PERMIT ACT THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR UNLARGELY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT  | LOCATION                                   | NATURE OF CONFLICT   | SECTION 7              |  |
|---|--|--|------------------------|--|
|   |  |  | CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT  |
| LOWER MISSISSIPPI VALLEY DIVISION                                   |  |  |                        |  |
| Atchafalaya River and Bayous<br>Chene, Boeuf and Black              | South-central Louisiana                    | Southern bald eagle. Construction will destroy<br>buffer zone forest. Barge activity may disturb<br>nesting eagles, channel may allow saltwater<br>intrusion, secondary development after construc-<br>tion. | Yes                    | Detailed consultation in<br>progress for 7 months.<br>Extensive research con-<br>ducted to study eagles,<br>analyze alternatives, etc. |
| Cache River<br>(Channel improvement)                                | Cache River Basin,<br>Arkansas             | Fat pocketbook mussel may be in river. Pigtoe<br>mussel last found in basin in 1914.   | No                     | Studies underway to<br>identify distribution,<br>life history requirements,<br>etc.  |
| Castor River and Upper<br>St. Francis River<br>(Channel alteration) | St. Francis Basin,<br>Arkansas             | Fat pocketbook mussel; Curtis' mussel;<br>Higgin's eye mussel; Project may affect<br>species habitat.  | No                     | Studies underway to<br>identify distribution,<br>life history require-<br>ments, etc.  |
| Meramec Park Lake   | <sup>Basin</sup><br>Meramec Park, Missouri | Gray bat-flooding of caves and loss of forage<br>habitat;<br>Higgin's eye mussel-change of river to reservoir.   | Yes                    | Studies underway for<br>evaluation.<br>Studies underway for<br>evaluation.   |
| Union Lake  | <sup>Basin</sup><br>Meramec Park, Missouri | Indiana bat) Loss of foraging habitat.<br>Gray bat )<br>Higgin's eye mussel-change of river to reservoir.  | No                     | Studies underway for<br>evaluation.<br>Studies underway for<br>evaluation.   |
| White River Navigation Project<br>(Channel maintenance)             | Newport, Arkansas                          | Fat pocketbook mussel-dredging may affect species<br>habitat.  | No                     | Studies underway to<br>identify distribution,<br>life history require-<br>ments, etc.  |
| PERMITS<br>E.J.J. Paterson - boat slip                              | Terrebonne Parish, LA                      | Possible disturbance of nesting bald eagle.  | Yes                    | Possibility with denial<br>of permit.  |



CORPS OF ENGINEERS PROJECTS AND PERMIT ACT  
THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT   | LOCATION                                | NATURE OF CONFLICT   | SECTION 7<br>CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                           |
|--|---|--|-------------------------------------|---|
| <u>MISSOURI RIVER DIVISION</u>   |   |  |                                     |   |
| Fort Randall Dam   | South Dakota                            | Operational change may have potential impact to the Karl E. Mundt National Wildlife Refuge and the Bald eagle. | No                                  | Alternatives being studied.   |
| Harry S. Truman Dam and Reservoir                                      | Osage River, Missouri                   | Inundation of roosting and nursery cave for the Gray bat.  | Yes                                 | Alternative methods to protect the cave and bats are being evaluated. |
| Missouri River, additional hydropower studies                          | Montana, N. Dakota, S. Dakota, Nebraska | Potential impact to Karl E. Mundt National Wildlife Refuge and the Bald eagle.                                 | No                                  | Study is in very early stages--will address problem..                 |
| <u>PERMITS</u>   |   |  |                                     |   |
| Gray Rock Dam-Basin Electric Power Cooperative's Laramie River Station | Wheatland Wyoming                       | Potential impact on the Whooping Crane and its proposed critical habitat.                                      | Yes                                 | Alternative operational schedules are being analyzed and evaluated.   |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR OTHERWISE AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT   | LOCATION      | NATURE OF CONFLICT  | SECTION 7<br>CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT |
|--|---------------|---|-------------------------------------|---|
| NEW ENGLAND DIVISION   |               |   |                                     |   |
| Dickey-Lincoln School Lakes  | Dickey, Maine | Project may affect the Bald eagle, Peregrine falcon and Eastern cougar. | Yes                                 | Consultation completed.                     |
| <p>The Furbish's housewort has been proposed for endangered status, with no final ruling as of this date. Extensive coordination with FWS and extensive research conducted by Corps. Experimental work indicates possibility that housewort can be relocated. Field surveys indicates distribution extends beyond project boundaries in U.S. and Canada. FWS will not initiate formal consultation as required by Section 7 until final rulemaking is completed.</p> <p>Department of the Interior Solicitor's opinion regarding no mitigation for critical habitat may negate further research by Corps of Engineers.</p> |               |   |                                     |   |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR OTHERWISE AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT  | LOCATION               | NATURE OF CONFLICT   | SECTION 7<br>CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT  |
|---|------------------------|--|-------------------------------------|--|
| NORTH CENTRAL DIVISION  |                        |  |                                     |  |
| Maintenance dredging of the Mississippi River, St. Croix River and Minnesota River - 9 foot channel | Minnesota              | Dredging and disposal may threaten the Higgin's eye mussel.  | Yes                                 | Field study results will be evaluated so project can be modified to avoid conflicts with listed species. |
| PERMITS   |                        |  |                                     |  |
| Borg-Warner Chemical Plant  | Saverton, Missouri     | May impact Indiana bat, Bald eagle, and Higgin's eye mussel and their habitat.   | Yes                                 | Alternatives are being analyzed and evaluated.   |
| Moline bridge-Arsenal Island reconstruction   | Rock Island, Illinois  | Demolition of existing bridge and construction of new bridge may impact the Higgin's eye mussel.   | Yes                                 | Studies are being made to modify demolition plan and the relocation of mussel bed.                       |
| Ottawa Shooting Club  | Sandusky Bay, Ohio     | Adjacent to nesting area of Bald eagle   | Yes                                 | Alternatives being studied.  |
| Reserve Mining Company on-land taconite tailing disposal site                                       | Near Silver Bay, Minn. | Approximately 2 square miles of proposed 6 square mile disposal area would infringe upon a 1836 square mile area designated as critical habitat for the Gray wolf. | Yes                                 | FWS determined project would not jeopardize the Gray wolf.   |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACT THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR HARSELY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT<br>NORTH PACIFIC DIVISION  | LOCATION            | NATURE OF CONFLICT  | SECTION 7   |          | PROJECT MODIFICATION<br>TO PREVENT CONFLICT   |
|---|---------------------|---|---|----------|---|
|   |                     |   | CONSULTATION INITIATED                                    | CONFLICT |   |
| Chief Joseph Dam<br>Additional Units  | Washington          | Possible effects on wintering habitat for the northern race of the Bald eagle.  | Yes   |          | Yes. Creation of prey habitat, installation of perching poles, leaving inundated trees in reservoir.      |
| Columbia River Channel,<br>Maintenance Dredging Disposal<br>Sites. The following sites<br>are located in Oregon (O) or<br>Washington (W) and are<br>identified by river mile:<br>O-43.0<br>W-37.0<br>O-36.8 | Oregon & Washington | Sites are bordering or within areas utilized by the Columbia white-tailed deer. Site W-37.0 has never been used before, so the impact of disposal on the deer near this beach is unknown. In the 0.43.0 site sightings of Columbia white-tailed deer have been reported. Approximately 22 other disposal sites border the areas that have been used for disposal in the past, and continued use should not adversely affect the deer. | No  |          | Confine disposal to beaches; expand beaches and revegetate to benefit the deer population.                |
| Dvorzhak Dam and Reservoir  | Idaho               | The development of Elk browse near the reservoir to provide wintering habitat may affect wintering American bald eagles through reduced roosting trees. We have received a verbal report (preliminary) of a raptor study of the area which indicates no nesting sites.  | No-But we will be requesting formal consultation shortly. |          | Yes, there should not be any conflict.  |
| Flathead-Clark Fork Basin Study-Hydropower  | Montana             | Unknown at this time.   | Yes   |          | Unknown at this time.   |
| Libby Reregulation Dam<br>Kootenai River  | Libby, Montana      | Raising reservoir elevation will inundate perching trees and prey habitat in wintering area of the northern race of the Bald eagle.   | Yes   |          | Yes. Creation of prey habitat, installation of perching poles, leaving inundated trees in reservoir area. |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR SEVERELY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT<br>NORTH PACIFIC DIVISION (CONTINUED) | LOCATION               | NATURE OF CONFLICT   | SECTION 7              |  | PROJECT MODIFICATION<br>TO PREVENT CONFLICT  |
|--|------------------------|--|------------------------|--|--|
|  |                        |  | CONSULTATION INITIATED |  |  |
| Skagit River Levee and Channel<br>Improvements Project       | Skagit County, Wash.   | Possible effects to critical wintering<br>habitat for the northern race of the<br>Bald eagle.  | No.                    | Will be initiated<br>in near future when<br>details regarding proj-<br>ect alternative are<br>available. | Project has just begun.<br>No information available<br>yet.                                |
| <u>PERMITS</u>   |                        |  |                        |  |  |
| Johnie R. Anderson Welcome<br>Slough                         | Columbia River Mile 41 | Bulkhead-located in area having known<br>concentrations of Columbia white-tailed<br>deer.  | No                     |  | The slough has already<br>been modified by installa-<br>tion of many other bulk-<br>heads. |
| Brusco Booming and Dredging Co.,<br>Westport Slough,         | Columbia River Mile 45 | Dredged Material Disposal-would eliminate<br>an area used by Columbia white-tailed deer.   | No                     |  | Deny the permit.   |
| Clatskanie People's Utility<br>District, Westport Slough     | Columbia River Mile 44 | Powerline Overhead Crossing-provides<br>electrical power to housing development<br>near Westport, Oregon, in area used by<br>Columbia white-tailed deer. | No                     |  | Minimize right-of-way for<br>powerline.  |
| Dick Magruder, Westport Slough                               | Columbia River Mile 44 | Moorage Facility and Boat Launching Ramp-<br>would occur in an area used by Columbia<br>white-tailed deer.   | Yes                    |  | Minimize disturbance of<br>adjacent natural areas.   |

COURTS OF ENGINEERS PROJECTS AND PERMIT ACT THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR SEVERELY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT   | LOCATION                          | NATURE OF CONFLICT   | SECTION 7              |  | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                              |
|--|-----------------------------------|--|------------------------|--|--|
|  |                                   |  | CONSULTATION INITIATED |  |  |
| OHIO RIVER DIVISION  |                                   |  |                        |  |  |
| Big Blue Lake  | Hancock & Rush Co.<br>Indiana     | Project may affect the foraging and nursery<br>areas of the Indiana bat.   | Yes                    |  | Studies will be<br>initiated to develop<br>alternatives.                 |
| Kehoe Lake   | Tygart's Creek, KY                | Development of areas adjacent to Kehoe Lake<br>may affect the Indiana and Gray bats and<br>Bat Cave (critical habitat). Bat Cave is<br>located on state parks. | No                     |  | Alternatives are being<br>studied and developed.                         |
| Columbia Dam (TVA)   | Duck River, TN                    | Proposed project may affect several species<br>of mussels.   | No                     |  | Potential for project<br>modification is undeter-<br>mined at this time. |
| PERMITS  |                                   |  |                        |  |  |
| Kanawha River Dredging   | Coalburg, Digmond &<br>London, WV | Dredging may affect the life cycle or destroy<br>habitat of the Pink mucket mussel and<br>Tuberculed blossom mussel.   | Yes                    |  | Awaiting recommendations<br>from the consultation<br>process.            |
| Multi-purpose Channel<br>Relocation by Town of<br>St. Paul, VA | St. Paul, VA                      | Approximately one mile of the Clinch River would<br>be rerouted through a proposed 1500 foot channel<br>which may affect several species of mussels.           | No                     |  | Potential modification<br>is being studied.                              |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR UNDESIRABLY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT   | LOCATION                       | NATURE OF CONFLICT  | SECTION 7              |  | PROJECT MODIFICATION<br>TO PREVENT CONFLICT  |
|--|--------------------------------|---|------------------------|--|--|
|  |                                |   | CONSULTATION INITIATED |  |  |
| <u>PACIFIC OCEAN DIVISION</u>  |                                |   |                        |  |  |
| Hilo Area Comprehensive Study  | Hilo, Hawaii                   | Project area habitat may support some listed species of birds.  | No                     |  | Evaluation will be made when field studies are completed."                               |
| Hilo Lava Flow Control   | Hilo, Hawaii                   | Proposed barrier may impact upon forest habitat and suspected listed species in area.                                 | No                     |  | "  |
| Hydroelectric Power Study  | Kaui, Molokai, Maui and Hawaii | Potential power development may alter or reduce streamflows into wetlands and alter habitat of listed species.        | No                     |  | "  |
| <u>PERMITS</u>   |                                |   |                        |  |  |
| Kawaiunui Marsh-Installation of olomana interceptor sewer and Maunawilli District sewer. | Kailua, Hawaii                 | Noises of construction may affect listed species and potential water diversion may affect habitat of listed species.  | No                     |  | Conditions of permit will require specific actions to preclude threat to listed species. |
| Kealia Pond-County of Maui to periodically clear the mouth of Kealia Pond stream         | Kihei, Maui                    | The clearing may alter the salinity and water levels of the pond which could change the habitat used by listed birds. | No                     |  | Alternatives are being analyzed and evaluated on this permit request.                    |

COURTS OF ENGINEER. PROJECTS AND PERMIT ACT THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR SEVERELY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT           | LOCATION                   | NATURE OF CONFLICT  | SECTION 7<br>CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                                    |
|----------------------------------|----------------------------|---|-------------------------------------|--|
| SOUTH ATLANTIC DIVISION          |                            |   |                                     |  |
| Falls Lake                       | North Carolina             | Discovery of red cockaded woodpecker on recreation lands.               | No                                  | Management measures initiated to protect species and planned road realignment. |
| Clark Hill                       | Georgia & So. Carolina     | The red-cockaded woodpecker is present on land proposed to be disposed. | No                                  | None   |
| Lake Okeechobee Regulation       | Central & Southern Florida | Lake Regulation   | Yes                                 | Monitoring of prey species (snail) required.                                   |
| Roosevelt Roads Harbor Deepening | Puerto Rico                | Blasting effects on manatee.  | Yes                                 | FWS opinion is pending, however, judgement is that proposed work can proceed.  |



WORKS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR OTHERWISE AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT<br>SOUTH PACIFIC DIVISION | LOCATION                 | NATURE OF CONFLICT  | SECTION 7              |  | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                             |
|--|--------------------------|---|------------------------|--|---|
|  |                          |   | CONSULTATION INITIATED |  |   |
| Belmont Marina                                   | Belmont, California      | Project may affect the California clapper rail and the Saltmarsh harvest mouse.   | No                     |  | Alternatives being studied.   |
| Los Angeles-Long Beach Harbors                   | Los Angeles, California  | Dredge material disposal areas may impact upon the Least tern and its critical habitat.   | Yes                    |  | Alternatives are being analyzed and evaluated.                          |
| Petaluma Small Craft Harbor                      | Petaluma, California     | Harbor may affect the California clapper rail. The boat traffic may also affect the least tern Clapper rail and Salt marsh harvest mouse.                                     | No                     |  | Project alternatives being studied and evaluated.                       |
| Redwood City Harbor                              | Redwood City, California | Disposal of dredged material at several potential sites would impact the Salt marsh harvest mouse, and perhaps the Clapper rail. Secondary impacts may affect the Least tern. | No                     |  | Potential dredge deposit sites being evaluated.                         |
| San Diego River (Mission Bay)                    | San Diego, California    | Project may impact on feeding areas of the Least tern and habitat of Brakish water snail.   | No                     |  | Potential modifications are being analyzed.                             |
| Santa Ana River                                  | Orange County, Calif.    | Potential impact on the Least tern.   | Yes                    |  | Alternatives are being studied and evaluated.                           |
| Santa Paula Creek                                | Santa Paula, California  | The Three-spined stickleback fish is reported to be in the study area.  | Yes                    |  | Studies underway to determine status of species in the project area.    |
| Sweetwater River                                 | San Diego, California    | The project may affect the Clapper rail.  | Yes                    |  | Alternatives are being studied and evaluated.                           |
| Telegraph Canyon                                 | Chula Vista, California  | The Clapper rail and Least tern are reported to be in project area.   | Yes                    |  | Studies underway to determine status of listed species in project area. |
| Wildcat-San Pablo Creek                          | San Pablo, California    | The project may affect the California Clapper rail, Salt marsh harvest mouse and Brown pelican found in the salt marsh at mouth of these two streams.                         | No                     |  | Alternatives are being studied and evaluated.                           |

COURTS OF ENGINEERS PROJECTS AND PERMIT ACT  
 THAT MAY POSSIBLY JEOPARDIZE  
 THE CONTINUED EXISTENCE OF A LISTED SPECIES OR  
 ASELY AFFECT CRITICAL HABITAT  
 (DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT                |                               | LOCATION  | NATURE OF CONFLICT                                      | SECTION 7<br>CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT |
|---------------------------------------|-------------------------------|---|---|-------------------------------------|---|
| <u>PERMITS</u>                        |                               |   |   |                                     |   |
| American Canyon Sanitary Landfill     | S. Napa County, CA            | Fill would eliminate wetland habitat that supports endangered species. Status of listed species in area is unknown.   | Yes-Accomplished by coordination under the EIS process. | Alternatives are being studied.     |   |
| Caltrans Highway Bridges              | S. San Jose, CA               | Four highway bridges across Coyote Creek will be in the range of the California condor.   | No  | Not determined at this time.        |   |
| City of Redwood City                  | Redwood City, CA              | Construction of haul road and deposit of fill material may affect the California clepper rail.  | No  | Not determined at this time.        |   |
| Del Marin Keys Unit IV                | Del Marin Keys<br>Ignacio, CA | Industrial development will be adjacent to marsh area support the Salt marsh harvest mouse.   | No  | Not determined at this time.        |   |
| East San Rafael Baylands Dev.         | San Rafael, CA                | Proposed fill will be on former tidelands and may affect the Salt marsh harvest mouse and Clepper rail.   | No  | Not determined at this time.        |   |
| Estero Municipal Improvement District | Foster City, CA               | Applicant plans to dredge channel through mudflat area where the California clepper rail and Salt marsh harvest mouse have been observed.                         | No  | Not determined at this time.        |   |
| McQueen's Oyster Breeding Pond        | Monterey County, CA           | Excavation of culture ponds would destroy upland and wetland habitat that may affect the California clepper rail, Least tern and Santa Cruz long-toed salamander. | No  | Not determined at this time.        |   |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR SEVERELY AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT<br>SOUTH PACIFIC DIVISION<br>PERMITS (CONTINUED) | LOCATION                         | NATURE OF CONFLICT   | SECTION 7                            |  |
|---|----------------------------------|--|--------------------------------------|--|
|   |                                  |  | CONSULTATION INITIATED               | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                    |
| Getty Oil Company   | DeBeque, Colorado                | Intake structure on Colorado River may impact the Colorado squawfish.  | No                                   | Studies when completed will be evaluated.                      |
| National Park Service   | Dinosaur National Monument, Utah | Ripraping section of Green river for bank protection has potential to impact the Colorado squawfish.   | No                                   | Not determined at this time.                                   |
| Metropolitan Oakland International Airport                              | Oakland, California              | Placement of fill in several locations on airport property may affect the Least tern.  | No                                   | Not determined at this time.                                   |
| Parkwood 101  | Near Redwood City, CA            | Fill and development on 13 acre site could have indirect adverse impact on Salt marsh harvest mouse.   | No                                   | Alternatives are being studied and evaluated.                  |
| Port of Redwood City  | Redwood City, California         | Construction of levee could have direct and indirect impact on Clapper rail, Salt marsh harvest mouse and Brown pelican.                         | Yes-Accomplished by the EIS process. | Permit denied.   |
| Redwood Shores (Hobbs Oil Estate)                                       | Redwood City, California         | Placement of fill for shopping center on several hundred acres of wetland would affect the California clapper rail and Salt marsh harvest mouse. | Yes-Accomplished by the EIS process. | 300 acres of salt marsh habitat donated for fish and wildlife. |
| Rio Blanco Oil Shale  | Rio Blanco County, CO            | Placement of diversion dam on White River will affect the Colorado squawfish.  | No                                   | Not determined at this time.                                   |
| Solano Meat Company   | Vallejo, California              | Proposed fill and development of area will affect the Salt marsh harvest mouse and the California clapper rail.                                  | No                                   | Not determined at this time.                                   |
| Ute Water Conservancy District  | Mesa County, Colorado            | Proposed dam on Jerry Gulch will affect the Colorado squawfish.  | No                                   | Not determined at this time.                                   |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACT  
 THE CONTINUED EXISTENCE OF A LISTED SPECIES OR  
 THAT MAY POSSIBLY JEOPARDIZE  
 (DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT                                      | LOCATION             | NATURE OF CONFLICT   | SECTION 7<br>CONSULTATION INITIATED     | PROJECT MODIFICATION<br>TO PREVENT CONFLICT    |
|---|----------------------|--|---|--|
| <u>SOUTH PACIFIC DIVISION</u><br><u>PERMITS (CONTINUED)</u> |                      |  |   |  |
| West Contra Costa Sanitary<br>Landfill                      | Richmond, California | The landfill will place fill on salt marsh<br>and may affect the Salt marsh harvest mouse,<br>California clapper rail and Brown pelican.       | No                                      | Permit denied.                                 |
| Woodley Island Marina Develop-<br>ment                      | Eureka, California   | Proposed development would eliminate<br>habitat used by the California brown pelican,<br>Clapper rail, and is in range of Peregrine<br>falcon. | Yes-Accomplished by<br>the EIS process. | Project modified to<br>reduce loss of habitat. |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACTS THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR OTHERWISE AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT<br>SOUTHWESTERN DIVISION                                    | LOCATION                    | NATURE OF CONFLICT   | SECTION 7<br>CONSULTATION INITIATED | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                                       |
|--|-----------------------------|--|-------------------------------------|---|
| Addicks and Barker Reservoirs  | 15 mi. W. Houston, TX       | Both are dry storage reservoirs which hold only flood waters. This may impact the Houston toad and the Attwater prairie chicken. A proposed high use recreation area is being studied. | No                                  | Presence of listed species not confirmed. Further studies required.               |
| Arkansas-Red River Chloride Control Project (Salt Plains National Wildlife Refuge) | Alfalfa County, OK          | Peregrine falcon is a winter transient. Bald eagle is a winter visitant. Whooping crane-migrant in area. The project may affect these species.   | Yes-23Dec77                         | Not known as of this date   |
| Choke Canyon Dam and Reservoir<br><i>Permit - Bur Rec</i>                          | Three Rivers, Texas         | Project may impact the Am. alligator and brown pelican impact fisheries production which is their food source.   | Yes                                 | Studies being conducted to make determination.                                    |
| Clear Creek  | Houston to Galveston, Texas | Secondary impact may be caused by the placement of dredged material on the Houston toad and Attwater prairie chicken.  | No                                  | Studies underway to analyze alternatives.   |
| Lower Rio Grande Basin   | South Texas                 | Loss of brush land that may be habitat of the ocelot and jaguarundi. May be indirect impact on Peregrine falcon.   | No                                  | Studies underway to determine distribution of E.S.; also to analyze alternatives. |
| Lufketa Lake   | Glover Creek, SE OK         | Leopard darter listed and critical habitat determined. Project not funded in FY 78.  | No                                  | When project is funded, consultation will be requested.                           |
| Sims Bayou and Tributaries   | SE Texas                    | Secondary impacts caused dredge placement may affect Houston toad.   | No                                  | "   |
| Taylor Bayou   | Jefferson County, Texas     | Project will eliminate 450 acres of swamp and 1360 acres of freshwater marshes which is habitat for alligator.   | No                                  | Studies underway to analyze alternatives.   |

CORPS OF ENGINEERS PROJECTS AND PERMIT ACT THAT MAY POSSIBLY JEOPARDIZE  
THE CONTINUED EXISTENCE OF A LISTED SPECIES OR OTHERWISE AFFECT CRITICAL HABITAT  
(DESIGNATED BY SECRETARY OF THE INTERIOR)

| NAME OF PROJECT/PERMIT  | LOCATION                            | NATURE OF CONFLICT   | SECTION 7<br>CONSULTATION INITIATED                        | PROJECT MODIFICATION<br>TO PREVENT CONFLICT                                       |
|---|-------------------------------------|--|--|---|
| Vince and Little Vince Bayous   | Pasadena, Texas                     | About one mile of dredging and placement of dredge material may impact upon the Houston toad.                    | No   | Consideration of new placement of dredge material may preclude conflicts.         |
| Wallisville Lake  | Wallisville, Texas                  | Loss of habitat for the American alligator and possibly the Red wolf.  | No   | Studies underway to analyze project alternatives.                                 |
| <u>PERMITS</u>  |                                     |  |  |   |
| Hidalgo and Willacy County Drainage Districts-Permit Drainage Improvement     | Hidalgo and Willacy County, Texas   | Loss of brush land that may be habitat of the Ocelot and Jaguarundi. May be indirect impact on Peregrine falcon. | No   | Studies underway to determine distribution of E.S.; also to analyze alternatives. |
| Missouri State Highway Commission U.S. Highway 67, bridge crossing Cane Creek | Near Popular Bluff, MO              | Construction of highway bridge may affect listed mussels and the habitat.  | Yes  | Awaiting field studies on mussel.   |
| Nueces County Navigation District No. 1 - Permit for O&M dredge.              | Port Arkansas, Texas                | Dredge disposal areas will be in close proximity to Brown pelican nesting area.                                  | No   | Work can be restricted to non-breeding season.                                    |
| River Sand and Gravel Co., Inc.   | Near New Port, Arkansas White River | Gravel mining will impact one or more endangered mussels.  | No-FWS recommend deferral until they complete field study. | Permit can be amended or revoked if appropriate.                                  |

CORPS OF ENGINEERS PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT                   | LOCATION             | NATURE OF ORIGINAL CONFLICT   | NATURE OF MODIFICATION  | COST OF MODIFICATION |
|--|----------------------|---|---|----------------------|
| <u>LOWER MISSISSIPPI VALLEY DIVISION</u> |                      |   |   |                      |
| Buttes Resources boat slip               | Terrebone Parish, LA | Dredge and maintain slip for gas and oil well in close proximity to eagle nest. | Construction and maintenance to be completed prior to nesting season. |                      |
| Clayton Williams, 2 slips                | Terrebone Parish, LA | Proximity of slip to an active eagle nest.                                      | Prohibit any construction work during the nesting season.             |                      |
| Farmland Industries, Inc., pipeline      | Terrebone Parish, LA | Pipeline proximity to active eagle nest.  | Pipeline alignment modified construction prior to nesting.            |                      |

CORPS OF ENGINEERS PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT                              | LOCATION          | NATURE OF ORIGINAL CONFLICT  | NATURE OF MODIFICATION   | COST OF MODIFICATION |
|---|-------------------|--|--|----------------------|
| <u>NORTH CENTRAL DIVISION</u>                       |                   |  |  |                      |
| Annual maintenance dredging<br>Miss. R. Pools 11-22 | Mississippi River | Possible destruction of endangered mussels or habitat.   | Intensive study of dredge cuts prior to dredging and modification of disposal methods. | \$25,000             |
| Davenport Local Flood Protection                    | Davenport, Iowa   | Potential loss of endangered mussels at borrow sites. Also, potential loss of shoreline timber utilized by Bald eagles.                          | Re-selected borrow sites & realigned levee to minimize timber loss.                    | \$ 4,000             |
| Green Bay Levee & Drainage District                 | Iowa              | Source of levee material was to come from Miss. R. with possible destruction Higgin's eye pearly mussel, spectacle case & fingernail clams       | Redesign of levee and new source of borrow material.                                   | \$ 3,000             |
| Muscataine Levee & Drainage District                | Muscataine, Iowa  | Possible degradation of an old oxbow lake which is prime habitat for IL mud turtle (listed endangered by state of IL) and other aquatic species. | Proposed dike and forebay at pumping plant to reduce potential surface pollution.      | \$ 2,000             |



CORPS OF ENGINEERS PROJECTS AND PERMIT  
 SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT   | LOCATION            | NATURE OF ORIGINAL CONFLICT   | NATURE OF MODIFICATION  | COST OF MODIFICATION |
|--|---------------------|---|---|----------------------|
| OHIO RIVER DIVISION  |                     |   |   |                      |
| Ohio Dept of Transportation<br>Remove & construct bridge<br>and realign highway. | Big Darby Creek, OH | The removal of the bridge, construction of the new bridge and realignment of the highway posed a threat to the Scioto Madtom. | Protective measures required: hand removal of old bridge and abutments; rock fill in stream for equipment crossing; leaving rock fill in stream and special precaution during construction to minimize sedimentation. | Unknown.             |

CORPS OF ENGINEERS PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT<br>SOUTH ATLANTIC DIVISION  | LOCATION   | NATURE OF   |   | COST OF MODIFICATION                      |
|--|--|---|---|---|
|  |  | ORIGINAL CONFLICT   | MODIFICATION  |   |
| Lake Okeechobee Regulation Project   | Central & Southern Florida   | Lake regulation may modify the critical habitat of the Everglade kite by prolonged flooding.  | FWS opinion that project as planned will not jeopardize the Everglade kite or modify its critical habitat. Monitoring the prey species (snail) is required. | \$200 consultation<br>\$10,000 monitoring |
| <b>PERMITS</b>   |  |   |   |   |
| Island Reef Associates   | Sarasota Bay, FL   | Whether the construction of a condominium and marina would affect a Brown pelican colony.   | Development and enforcement of boating regulations in specific areas.   | \$200.00                                  |
| Cocoa City Marine<br>Florida Dept of Natural Resources<br>Florida East Coast Properties<br>Gomez Tract Intra-Coastal Waterways | Cocoa, FL<br>Blue Sprs on St. Johns River<br>Key Biscayne, FL<br>Pech Lake, FL | Whether increased marina facilities would result in increased power boat traffic with an increased possibility for boat-manatee collisions. | Reduction in the amount of proposed dockage facilities and development of strict boating regulations.   | \$500.00                                  |

CORPUS OF ENGINEERING PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT<br>SOUTH PACIFIC DIVISION | LOCATION  | NATURE OF<br>ORIGINAL CONFLICT   | NATURE OF<br>MODIFICATION  | COST OF MODIFICATION |
|--|---|--|--|----------------------|
| Humboldt Harbor & Bay                            | Humboldt, CA  | Placement of dredge from channel on former disposal sites would have affected a plant Menzies Wallflower protected by the State.   | Dredge material placed on disposal sites that did not affect the wallflower, and on an acceptable beach area.  | \$150,000            |
| Harm Springs Dam-Lake Sonoma                     | Sonoma County, CA                                     | The project provided a parcel of land to mitigate for loss of wildlife habitat. In August 1977 over 1200 acres was determined to be Critical Habitat for the Peregrine falcon. | Recreational management plan for project lands has been modified to preclude use of critical areas during nesting season of the Peregrine falcon. Final phase of coordination is underway. | Insignificant        |
| <u>PERMITS</u>                                   |   |  |  |                      |
| Hahn Shopping Center                             | Corte Madera, CA                                      | Deposit of fill in wetlands would affect the Salt marsh harvest mouse and the California clapper rail.   | Project modified to reduce major impacts on listed species. Wetlands preserved for the endangered species.   | Unknown              |
| Coloquio Coal Co.<br>(railroad spur)             | Yampa River, Mill Creek, Wilson Creek, Jubb Creek, CO | Construction of the railroad spur may impact the Colorado squawfish.   | When rail embankment encroaches on stream-maintain stream channels build at least 2 approved backwater areas-construction along river to be done in fall and winter season                 | Significant          |

CORPS OF ENGINEERS PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT<br>SOUTH PACIFIC DIVISION<br>PERMITS (CONTINUED) | LOCATION           | NATURE OF<br>ORIGINAL CONFLICT   | NATURE OF<br>MODIFICATION   | COST OF MODIFICATION |
|---|--------------------|--|---|----------------------|
| Magu Lagoon   | Oxnard, CA         | Placement of fill in a feeding and resting area for Least tern.                          | Tidal flushing and inter-tidal areas increased.   | \$100,000            |
| Orchard Mesa Irrigation District<br>pumping plant on Colorado River     | Grand Junction, CO | Pumping plant will cause degradation of water quality and habitat of Colorado squawfish. | Intake structures screened and not placed in slack water; stop water diversion when stream water quality drops below state standards.   | Significant          |
| Public Service Co. of Colorado  | Grand Junction Co. | Pipeline crossing may impact on Colorado squawfish.                                      | Construction work done during low flows, channels restored to original contours, revegetate adjacent areas, prevent POL spills, minimize use of machinery in channel, keep equipment washing out of stream. | Significant          |
| Ute Water Conservancy District  | Palasades, CO      | Pumping plant may impact on Colorado squawfish.  | Intake structures screened, prevent POL spills into river, revegetate all disturbed areas, prevent concrete from going into river and keep equipment washing out of the river.                              | Significant          |

CORPS OF ENGINEERS PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT  | LOCATION                             | NATURE OF ORIGINAL CONFLICT   | NATURE OF MODIFICATION   | COST OF MODIFICATION |
|---|--------------------------------------|---|--|----------------------|
| <b>SOUTHWESTERN DIVISION</b>  |                                      |   |  |                      |
| <b>PERMITS</b>  |                                      |   |  |                      |
| Channel to Victoria-Maintenance Dredging  | Calhoun and Victoria Counties, Texas | Dredging will affect an active eagle nest.  | No dredging within 1/2 mile of nest from October to March.                             | Significant          |
| Corpus Christi Ship Channel Maintenance Dredge  | Corpus Christi, Texas                | Brown Pelican Island is man-made of dredge material and is used by pelican during dredge operation.                     | No dredge deposits in area during period 1 March through 31 July.                      | Significant          |
| GIWW, Corpus Christi Bay to the Mud Flats Maintenance Dredging                          | Coastal Texas                        | Several dredge material islands are used by listed birds.   | No dredge deposits in area during March-June.  | Significant          |
| Gulf Intracoastal Waterway, San Antonio Bay to Corpus Christi Bay, Maintenance Dredging | Coastal Texas                        | Channel traverses the Aransas National Wildlife Refuge for Whooping crane.  | Dredging sites are coordinated with FWS. Habitat is established using dredge material. | Significant          |
| GIWW and Sabine-Neches Waterways Maintenance Dredging                                   | Coastal Texas                        | Sydney Island is a man-made dredge material island. Continuously used by more than 12 species birds. No listed species. | This island no longer used for deposit.  |                      |
| Matagorda Ship Channel Maintenance Dredging   | Coastal Texas                        | A dredge material island became a rookery during disposal operations. The Brown pelican may use the island.             | Dredging contract modified to not place material on island.                            | \$24,500 in 1977     |

CORPS OF ENGINEERS PROJECTS AND PERMITS SUCCESSFULLY MODIFIED  
SO THE PROJECT CAN GO FORWARD WITHOUT ADVERSELY IMPACTING THE LISTED SPECIES

| NAME OF PROJECT/PERMIT         | LOCATION                           | NATURE OF ORIGINAL CONFLICT   | NATURE OF MODIFICATION  | COST OF MODIFICATION |
|--------------------------------|------------------------------------|---|---|----------------------|
| <u>SOUTHWESTERN DIVISION</u>   |                                    |   |   |                      |
| <u>PERMITS (CONTINUED)</u>     |                                    |   |   |                      |
| Energy Development Corp.       | Calhoun & Aransas Co, TX           | All are within close proximity to critical habitat of the Whooping crane. | No work activities are permitted between 15 October and 15 April and no structures taller than 15 feet are allowed. | Minor                |
| Research Exploration Corp.     | St. Charles Bay, TX                |   |   |                      |
| Getty Oil Co.                  | St. Charles Bay, TX                |   |   |                      |
| Mitchell Energy Offshore Corp. | St. Charles Bay, TX                |   |   |                      |
| Carl Oil and Gas Co.           | San Antonio Bay, TX                |   |   |                      |
| Getty Oil Co.                  | San Antonio Bay, TX                |   |   |                      |
| Sun Oil Co.                    | San Antonio Bay, TX                |   |   |                      |
| Yumac Production Co.           | San Antonio & Espiritu<br>Bays, TX |   |   |                      |
| Mitchell Energy Offshore Corp. | Aransas & Calhoun Co, TX           |   |   |                      |

EXECUTIVE OFFICE OF THE PRESIDENT  
COUNCIL ON ENVIRONMENTAL QUALITY  
722 JACKSON PLACE, N. W.  
WASHINGTON, D. C. 20006

September 20, 1977

Honorable Robert L. Leggett  
U.S. House of Representatives  
Washington, D.C.

Dear Congressman Leggett:

This is a reply to your letter of July 27, 1977 addressing eleven questions to the Council on the administration of Section 7 of the Endangered Species Act.

1. You ask whether either the Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS) have ever prepared an EIS in connection with their duties to implement Section 7 of the Endangered Species Act.

We are advised that FWS has commenced preparation of an EIS covering the entire Endangered Species Program administered by FWS. This programmatic EIS is intended to set out alternative goals, priorities and impacts of the program through the 1980s. FWS has also prepared a draft EIS in 1973 for the Administration-proposed Endangered Species Act (H.R. 4758) and a draft EIS for implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora. We are also informed that an EIS has been prepared jointly by FWS and NMFS on a proposed listing of sea turtles as an endangered species. Apart from this, a review of our records shows that neither FWS nor NMFS have prepared any specific or programmatic EISs in connection with their actions implementing Section 7 of the Endangered Species Act.

2. You ask whether the Council has advised either FWS or NMFS to prepare EISs for actions under Section 7 of the Act.

The Council has discussed this matter informally with the FWS and NMFS but the Council has not specifically advised either FWS or NMFS to prepare any environmental impact statements for actions proposed to be taken under Section 7. The Council intends to continue discussing this matter with these agencies and to work out satisfactory resolutions for any problems that may continue to exist.

3. You ask why EISs have not been prepared by these agencies.

In general, the Council believes that the listing of threatened or endangered species and the designation of their critical habitat are subject to NEPA, and that these actions may require the preparation

and consideration of EISs when these actions have the potential for significantly affecting the quality of the human environment. Similarly NEPA may require FWS and NMFS to prepare EISs in connection with other program actions these agencies may take to implement the Endangered Species Act. We believe in this respect, that NMFS and FWS must comply with the Council's Guidelines on the preparation of environmental impact statements in deciding whether an EIS is necessary for a proposed listing of an endangered or threatened species, for a proposed designation of critical habitat, or for other proposals to implement Section 7 of the Act. As indicated in our first answer, the FWS is currently preparing a programmatic EIS for implementation of its duties under the Endangered Species Act. Although the Council has not examined every action by FWS and NMFS implementing Section 7 of the Act, there is the possibility that, even with the programmatic EIS, specific EISs should be prepared for certain actions that these agencies intend to take. The Council intends to continue discussing this question with these agencies and to work out satisfactory resolutions for any problems that may continue to exist.

4. You ask to what extent it will be possible to designate critical habitat for all threatened and endangered species in the future.

It is scientifically and operationally possible to designate critical habitat for most threatened and endangered species, in advance of proposed federal, state and private activities that may pose a threat to such habitat. The extent to which it will be possible to designate critical habitat in the future will depend on the degree of effort expended by the lead federal agencies and by how well Congress funds such efforts. It will also depend on the degree to which federal resource management agencies comply with the President's directive to provide information on critical habitat on lands under their control. Cooperation within the federal government should significantly help FWS and NMFS designate critical habitat in the future.

5. You ask whether additional legal authorities are needed to identify critical habitat in a timely manner.

Federal agencies have not given enough attention to implementation of existing statutory authority and directives on identification and designation of critical habitat. During the past three years, however, the FWS and NMFS have prepared joint draft regulations for implementing Section 7 of the Act. These regulations are expected to be promulgated shortly. Since not enough has been done to date towards implementing existing legal authorities and directives, we do not have an adequate basis for judging whether new legal authority is needed to enable identification of critical habitat in a timely manner.



-3-

6. You also ask whether new legal authority is needed to protect the habitat of threatened or endangered species from the actions of

- a. federal agencies
- b. state agencies
- c. private individuals or corporations

Section 7 of the Act applies only to federal activities affecting threatened or endangered species and their habitat. Section 7's application was limited by Congress to federal activities because it was believed that federal activities posed the most immediate and controllable threat to listed species and their habitat. Not enough is known about how state agency actions and private actions are affecting listed species and their habitat, but their effect may be considerable. At this time, however, we do not have sufficient information to warrant extension of Section 7 or equivalent requirements to state agency actions and/or private actions.

7. You ask to what extent Section 7's requirements have been applied to federal actions outside the United States.

As far as we know the requirements of Section 7 of the Act have not yet been applied to federal actions beyond the geographical jurisdiction of the United States.

8. You ask what progress has been made in restoring threatened or endangered species as a result of Section 7 of the Act.

Following the few years of experience under Section 7 of the Act it is not possible to quantify progress in restoring threatened or endangered species as a result of Section 7 of the Act. We believe, however, that Section 7 has operated effectively to protect critical habitat from irreparable harm or destruction, thus allowing the eventual restoration of some listed species. Progress in protecting critical habitat is evident, in some measure, in the fact that over 4500 "consultations" have occurred between FWS and federal agencies proposing activities that posed potential harm to critical habitat.

9. You ask which class of federal actions pose the greatest dangers to the continued existence of endangered species and their critical habitat, and you ask us to identify the agencies concerned.

We believe that the various water resources projects are currently the class of federal actions which pose the greatest dangers to the continued existence of threatened or endangered species and their critical habitat. Federal agencies primarily involved in such projects are: Tennessee Valley Authority, Army Corps of Engineers, Bureau of Outdoor Recreation (Department of Interior), Soil Conservation Service channelization projects (Department of Agriculture).

-4-

We also believe that some federal land management agencies, particularly the Bureau of Land Management, have not made a sufficient effort to regulate activities such as off-road vehicles that are detrimental to critical habitat.

10. You ask what is the best mechanism for assessing and resolving conflicts under Section 7.

As you may know, the President, through his recent Environmental Message, directed the Council to consult with the states and executive agencies and report within 6 months on steps needed to simplify, coordinate and codify wildlife conservation law. A component of this study is an examination of the existing consultation process in Section 7 of the Act, including an analysis of mechanisms for assessing and resolving any conflicts that might arise between the preservation of critical habitat and other national goals. We do not believe that we can adequately answer this question and question 11 (general recommendations for improving Section 7) until the conclusion of the wildlife law study.

We are attaching a copy of the Council's recent testimony on the administration of the Endangered Species Act. It reflects our current view that the Act should not be amended for the purpose of exempting specified classes of federal actions from the Act or otherwise to change the existing consultation process in Section 7. Additional agency experience with Section 7 and our wildlife law study, however, may demonstrate the need for future amendments.

We hope that the above answers to your questions will be helpful to the subcommittee and we join with you in hoping that concerns over the effective operation of the Endangered Species Act can be resolved.

Sincerely,

*Marion Edey*  
Marion Edey  
Member Designate

Enclosure

## U.S. FISH AND WILDLIFE SERVICE RESPONSE TO ISSUES RAISED

**Issue:** Should an environmental impact statement be required before listing a species or designating Critical Habitat?

**Response:** The preparation of full blown Environmental Impact Statements (EIS) before Critical Habitats are listed has been considered since the Act was passed in December of 1973. In fact, this issue has been considered every time a species is proposed for listing or a Critical Habitat designation is proposed.

An Environmental Impact Assessment (EIA) in accordance with the requirements of the National Environmental Policy Act (NEPA) is prepared at the time of each proposed rulemaking. After a review of the public comments received on the rulemaking, the EIA is updated as necessary and finalized. Prior to final rulemaking, the Service considers the public comments received and the final EIA to determine whether the rulemaking is a major Federal action significantly affecting the human environment; thus requiring the preparation of an EIS. If an EIS is not required, a "Negative Declaration" to that effect is prepared. To date, only "Negative Declarations" have been prepared for the following reasons:

The first step in determining whether an EIS should be prepared is to decide whether the proposed action is a major Federal action. The designation of Critical Habitat is clearly a Federal action; the question is whether it is a major one. Traditionally, the focus in making this decision is upon "the cost of the project, the amount of planning that preceded it and the time required to complete it", Hanley v. Mitchell, 460 F. 2d 640, 644 (2nd Cir. 1972), reflecting NEPA's orientation toward project construction that will result in irretrievable commitment of

resources. Obviously, this approach does not work in the context of the Endangered Species Act.

The listing or delisting of a species or its Critical Habitat is essentially regulatory in nature. In determining whether an action taken pursuant to a regulatory program is a major Federal action the focus should be upon the impact of the proposed action on the persons or things regulated.

Generally, the designation of Critical Habitat does not rise to the level of being a major Federal action. Critical Habitat designation is only a matter of concern for other Federal agencies. It is a recognition of the biological significance of certain habitats. It is nothing more or less than a notification to all Federal agencies that the designated area is the air, water and land space needed to assure the continued survival of the species and to provide reasonable additional space for its future recovery and removal from the list. It puts Federal agencies on notice that their actions in the designated areas cannot be inconsistent with the conservation of the Endangered or Threatened species. Only those actions that would alter the habitat to the detriment of the species that depend upon it are restricted. Thus, there may be many kinds of Federal actions that can occur in critical habitat areas.

In most cases, the Service has no way of knowing whether, or the extent to which, other Federal agencies may be affected. The Service does not know what actions the Federal agencies have planned, or will plan in the future, or what the impact of those actions

will be on the species or Critical Habitat area. The Service does attempt to discover what these effects will be through inquiries prior to the final designation. But as a general rule, the effects of a Critical Habitat designation do not make it a major Federal action.

The second step in determining whether an EIS should be prepared before undertaking a Federal action is to decide whether the action will significantly affect the quality of the human environment. The focus here is on the quantitative environmental impacts of the action.

The designation of Critical Habitat does not have any direct impact upon the environment. The designation of Critical Habitat, in and of itself, prevents nothing, stops nothing, discourages nothing and controls nothing. It simply designates an area that is necessary to the continued existence and possibly to the recovery of an Endangered or Threatened species. It is a biological designation. Economic and other factors cannot be considered because there is no way of knowing what Federal actions may be contemplated in the area. These activities are only curtailed, modified, or delayed when the activity will materially reduce the value of the Critical Habitat to the Endangered or Threatened species concerned.

A Critical Habitat designation may indirectly affect the environment, however only to the extent it ultimately causes Federal agencies to modify or forego actions that would directly affect the environment. Any such indirect environmental impact is generally beneficial. The

prohibition against modification of Critical Habitat by Federal agencies tends to preserve the natural environment. This reflects the Endangered Species Act's purpose of conserving both Endangered species and the ecosystems upon which they depend. Thus, even in the extreme case, the effect of designating Critical Habitat is to preserve the status quo. The environmental impacts in these rare situations have not been found to be significant. The Service believes that the administrative record generated during the rule-making process, coupled with the proposal's EIA, creates the "functional equivalent" of a full blown EIS. Thus, as a result of the rulemaking process the decision maker has received the same environmental education on the anticipated impacts of a Critical Habitat determination as he would have had if an EIS had been prepared.

The Federal action agency, not the U.S. Fish and Wildlife Service, makes the decision to act, to modify an act, or not to act. The key to success is good faith consultation by the Federal action agency as early in the planning process as possible. If requiring a full blown EIS is used to delay the U.S. Fish and Wildlife Service in designating Critical Habitat, it will ultimately hurt the Federal action agency most. If an EIS is used to try to force consideration of economics, sociology, politics, etc., in Critical Habitat determinations, instead of dealing strictly with biology, it will ultimately hurt the species most.

Whether or not a Critical Habitat is actually designated, Federal agencies are still obligated to assure that their activities do not

jeopardize the continued existence of an Endangered or Threatened species under section 7 of the Act. One of the prime biological considerations in deciding whether or not a species will be jeopardized by a particular Federal activity is the effect of that activity on the species habitat. This further illustrates that the act of designating Critical Habitat is a straight forward biological process whose primary benefit is to the Federal agencies that must comply with section 7 of the Act. It stands to reason that if the Federal agencies know where critical habitats are located it helps their decisionmaking processes. If they do not know where the Critical Habitat will be designated they must find out before they know whether or not to request consultation. If the Service must prepare an EIS before designating Critical Habitat, it will take an additional year or more for each designation. This would be disastrous to the Federal agencies and their actions that may effect an Endangered or Threatened species.

Forcing the preparation of an EIS before a Critical Habitat is designated regardless of whether or not it is required by NEPA will: (1) hamper Federal agencies in complying with section 7 which can only result in litigation, delays and work stoppages, (2) not relieve Federal agencies from the necessity of complying with section 7 because regardless of whether or not a Critical Habitat is listed, the Federal agency must assure that its action does not jeopardize the continued existence of the listed species, and (3) regardless of motive, serve not only to the detriment of Federal agencies and their actions, but to Endangered and Threatened species and their habitats.

ISSUE: Who should pay for undertaking alternative measures to reduce or eliminate project impacts on a listed species?

RESPONSE: The concept of "mitigating" environmental impacts of a Federally funded or authorized project is well established in such statutes as the Fish and Wildlife Coordination Act, the Small Reclamation Projects Act and the Federal Power Act. "Mitigation" is included as a part of project costs. The Endangered Species Act is no different in this regard. Federal agencies are directed to take whatever action is necessary to insure that their actions do not jeopardize a listed species. The acquisition of habitat, transplantation, and/or captive propagation are a few of the actions which might be warranted as part of compliance with section 7.

It has been suggested that since the cost of "mitigating" is Federal money, it does not matter which agency budget contains the funds. While it is true that the money all comes out of the same "pot," it is not true that it does not matter which agency budgets the money. This argument if taken to its extreme suggest that it would not matter if the Fish and Wildlife Service budget contained the funds to construct Tellico Dam, Interstate 10 or any other public works project. The fact is, it does matter.

The Federal agency with the vested interest in resource development is responsible for pursuing the authority and funding for the action it wants to undertake. The Federal action agency is accountable for all things associated with the activity including NEPA compliance,



design, engineering, permits from another agency and safety. It would be absurd and devastating for a Federal agency to design and construct a dam without taking appropriate precautions to insure its structural safety, even if it costs more to construct. Obviously, loss of an endangered species is nowhere as devastating as loss of human lives. That is not the point. The point is that the Federal agency is more concerned for the consequences of its actions when it is held accountable.

There are alternative ways of accomplishing an objective. There are resource development alternatives, conservation and mitigation techniques that can be implemented which will allow resource utilization to meet man's physical and material needs and yet insure a reasonable natural diversity. The Federal agency wanting or authorized to undertake the action must be responsible for the consequences of its actions and bear the costs involved. That is the price paid to achieve the material benefits we want and at the same time preserve our natural heritage for the enjoyment and educational benefits of future generations.

ISSUE: Can the Service record Critical Habitat designations on county land records?

RESPONSE:

The Service is willing to annually compile Critical Habitat designations by State for distribution to the appropriate governors with a request that they make them available to the local units of government. Furthermore, all Critical Habitat designations (including a map) are published in the Endangered Species Technical Bulletin, a monthly bulletin that is widely distributed. While not legally necessary or required, these initiatives would make it easier for the public to obtain information on critical habitat designations.

ISSUE: Could the Endangered Species Act stop projects that would improve the quality of the environment?

RESPONSE: The two projects that have been mentioned in testimony are a sewage treatment plant on the Cahaba River in Alabama and a desalinization project proposed for the Virgin River in Utah. There appears to be no reason at this time to believe that either of these projects will be stopped by the Endangered Species Act.

On the Cahaba River Project it should be noted that the treatment plant, to be situated on the upper portion of the River, could, at times of low flow, contribute a considerable portion of the total flow of that section of the river (up to one-third of the flow, according to testimony by the County Commissioner of Public Works, Mr. Dross). While this sewage plant might relieve some urban pollution problems, it is easy to see where, if one-third of the flow of a stream were treated waste, this might be detrimental to the health of many species, not only those that are endangered. It should be stressed, however, that consultations have not begun on this project and there is no reason to believe, that, if indeed this sewage treatment plant would adversely affect the habitat of an endangered species, there might not be some alternative or modification that would accomodate both the sewage plant and the species.

The second project mentioned in the testimony, the desalinization project in Utah, has been proposed by the Bureau of Reclamation.

A biological opinion was issued on June 6, 1978, which found no jeopardy to the woundfin minnow, the only listed species, provided certain modifications involving minimum flow are incorporated into the project. These modifications are scheduled for discussion at a meeting of Reclamation representatives and FWS personnel in our Salt Lake City Area Office in the near future.

It is possible to conceive of specific projects designed to reduce pollution where the cure is worse than the disease vis-a-vis some endangered species, such as using certain chemicals to purify organic waste. It would be difficult, however, to imagine a situation where the overall enhancement of air, water or soil quality would be detrimental to an endangered species.

ISSUE: HOW IS THE PUBLIC INVOLVED IN THE LISTING PROCESS?

RESPONSE: The American public is an integral part of the review and rulemaking process by which species and their Critical Habitats are added to, modified, or deregulated from the U.S. List of Endangered Wildlife and Plants. There are three ways public participation is ensured and specifically encouraged by the Act. First, section 4 allows any member of the public possessing substantial evidence to petition Interior to consider the review of any species with the intent of proposing those which are qualified. Since the Act's passage about 150 petitions involving almost 4000 species have been received. Many of these have resulted in Federal Register Notices or Proposals. Probably the most significant public participation in the listing process is the 60 day public comment period following each Federal Register Notice or Proposal. Tens of thousands of comment letters from the public have been received, considered and summarized by the Service. As many as 5000 have been received for a single proposal. Final Rulemakings are changed from the proposal if substantive public comments indicate a better course of action. In addition to the formal public comment period, anyone may request that a public hearing be conducted prior to issuance of a final rule. These public hearing requests, and the Service's final decision on whether or not they should be held, must be published in the Federal Register. Furthermore, section 11 provides that any person may bring a civil action in U.S. District Courts for alleged violations of the Act, including the Service's failure to add species to or deregulate them from the list.

ISSUE: HOW ARE THE FEDERAL AGENCIES INVOLVED IN THE LISTING PROCESS?

RESPONSE: Section 4 of the Endangered Species Act of 1973 details the procedures by which the Secretaries of Interior and Commerce may add species to or remove them from the U.S. List of Endangered and Threatened Wildlife and Plants.

The listing authority in Interior was delegated to the Director of the Fish and Wildlife Service.

The procedure involves three major steps, each involving Federal Register publication. The first step, which is optional, is a Notice of Review announcing that information indicates a particular species may qualify for proposal. The second is a Proposed Rulemaking which proposes species and their Critical Habitats for addition to the List. Lastly, a Final Rulemaking announces the addition of species and their Critical Habitats to the List.

At the time of the Act's passage the Secretary of the Interior notified all Federal Departments and detailed their responsibilities and opportunities for input with regard to the rulemaking process. In addition, the Service routinely makes formal contact with involved Federal agencies prior to and at the time of each Federal Register Notice, Proposal and Final Rule. Special notification letters are sent to each agency which is or might be involved with the species or Critical Habitats named in the publication. Pre-publication letters are sent to certain agencies at least ten days prior to Federal Register publication. Additionally, frequent informal contact is maintained between the Service and other agencies at all times.

ISSUE: WHAT IS THE SECTION 7 CONSULTATION PROCESS?

RESPONSE: The Interagency Cooperation Regulations published jointly in the Federal Register on January 4, 1978, by the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) details the section 7 consultation process. Pursuant to those regulations, section 402.04(a) states that the consultation process shall be initiated by Federal agencies after review and identification of activities and programs that may affect listed species. If a Federal agency identifies an activity or program that may affect listed species or their habitat, that agency shall initiate consultation by sending a written request to the appropriate FWS or NMFS official. Consultation can also be requested by the FWS or NMFS if they should become aware of a Federal activity or program that may affect listed species and has not received the benefit of consultation.

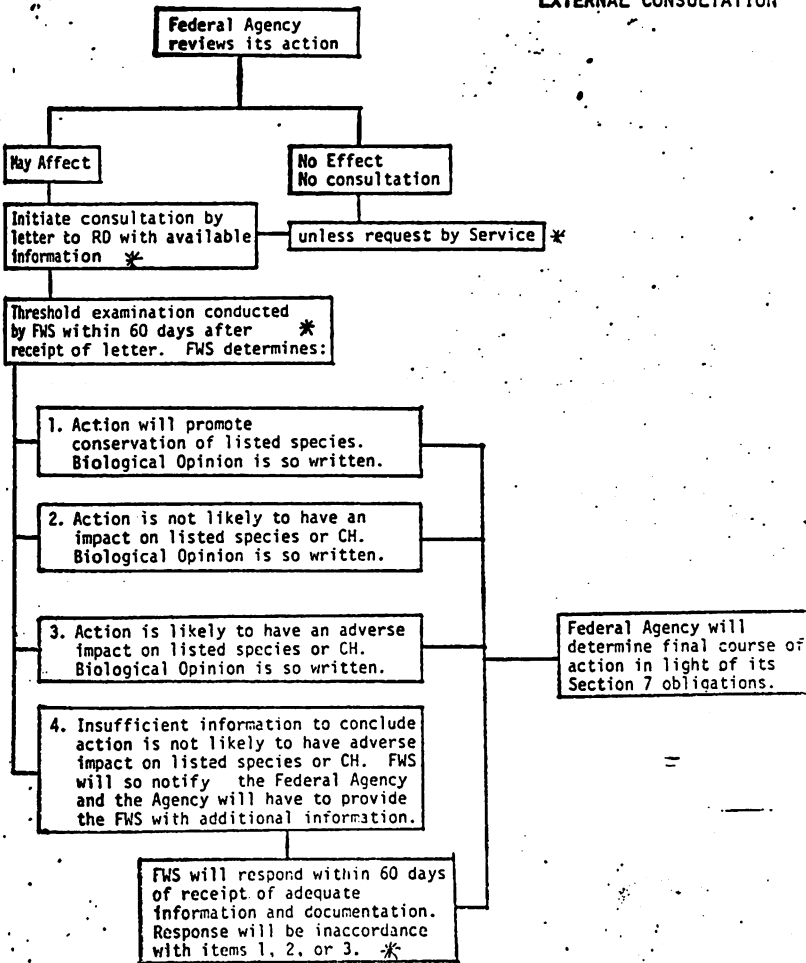
Upon receipt of a written request for consultation from a Federal agency along with appropriate information, the FWS or NMFS will conduct a threshold examination, a preliminary assessment, within 60 days after receipt of the letter to ascertain if an activity or program will affect listed species or their habitat. Based on the threshold examination, the FWS or NMFS will render a Biological Opinion to that Federal agency, which will contain one of the following conclusions:

1. Action will promote conservation of listed species;
2. action is not likely to have an impact on listed species  
or habitat;
3. action is likely to have an adverse impact on listed species  
or habitat;

4. insufficient information to conclude that action is not likely to have an adverse impact on listed species or their habitats. FWS will so notify the agency, which will have to then provide FWS with additional information. The Service will respond within 60 days of receipt of adequate information and documentation. Upon receipt of a Biological Opinion, the Federal agency will determine the final course of the action in light of section 7 obligations.



## EXTERNAL CONSULTATION



\* Points at which there is written communication between the Federal Agency and the Service.

ISSUE: IS THE FISH AND WILDLIFE SERVICE TRYING TO STOP NATURAL EVOLUTION?

RESPONSE: The Fish and Wildlife Service in carrying out its responsibilities under the Endangered Species Act is not trying to halt the process of natural evolution, but rather is striving to prevent the endangerment and extinction of plant and animal species caused primarily by man's influence on existing ecosystems. Our actions, if successful, will allow natural evolution to continue.

The earth's diversity of animal and plant life is one of the most important components of our national heritage. Unfortunately, our growing appreciation for the potential value of all species has coincided with their accelerating extinction rate. Widespread disruption of habitats and overexploitation are the major causes of this problem. However, many endangerments and extinctions can be prevented by the protection of a relatively small area or by the careful development of land and water use projects. The President has promised the American public that a reasonable effort to do exactly this will be made at the Federal level. His Environmental Message of May 23, 1977, requested acceleration of the Federal program to ensure species protection and to resolve any conflicts between protection and other resource uses.

**Issue:** Are Endangered or Threatened species stopping certain actions on military bases?

**Response:** It has been stated that Endangered or Threatened species are stopping certain activities on military bases. Particular attention was given to the red-cockaded woodpecker stopping training operations at Camp LeJeune. We believe that the testimony provided by the Department of Defense adequately addressed this issue and our records substantiate the fact that there has been little or no impact on military activities due to the presence of Endangered or Threatened species (see attached). General Kuci in his testimony stated that Camp LeJeune has 86,700 acres. Red-cockaded woodpecker have impacted 1,700 acres. 676 acres have been closed to training and this is roughly less than one percent of the total acreage.

1. How have we restricted any military base, if at all?
2. Does the military believe we have restricted their activities?  
If so, who - where - and why do they think so?

Military: Fort Bragg, North Carolina

Activity: Timber Sale - Informal Consultation - Red-Cockaded Woodpecker

1. None
2. Yes. Robert Duckworth, FORSCOM, Atlanta. He felt that they had done all that is required to their knowledge and felt that they were making sincere efforts in the recovery plan effort.

Military: United States Readiness Command, MacDill Air Force Base, Florida

Activity: Training - Bald Eagle 78, Eglin Air Force Base, Florida -  
Informal Consultation - Okaloosa Darter & Red-Cockaded Woodpecker

1. None
  2. No. R. W. Maxwell, CW3, Assistant Adjutant General. He stated our assistance and cooperation had been beneficial. (Attached)
- Military: Camp Lejeune, North Carolina  
Activity: Mechanized Infantry Training - Informal Consultation - Red-Cockaded Woodpecker

1. None
2. Possible. Some field commanders in the exercise felt we were restricting their training. The Camp, Natural Resource Division, felt that our recommendations were acceptable.

Military: Fort Jackson, South Carolina

Activity: Firing Range and Timber Sale - Formal Consultation - Red-Cockaded Woodpecker

1. None
  2. Consultation initiated on May 26, 1978. No comments.
- Military: Roosevelt Road Naval Station, Puerto Rico  
Activity: Harbor Deepening and Dredging - Formal Consultation - Manatee & Yellow-Shouldered Blackbird
1. None
  2. Biological Opinion issued on June 1, 1978. No jeopardy with recommendations. No comment received to date.

Military: Eglin Air Force Base, Florida

Activity: Low-Altitude F-4 Flights (MOA), Alabama - Informal Consultation - No endangered species in particular

1. None
2. No problem. Provided information on endangered species in area.

Military: Navy

Activity: Submarine Support Base, Kings Bay, Georgia - Construction -  
Informal Consultation - Manatee

1. None
2. No jeopardy - No comments from Navy.

Military: Navy

Activity: Target Range, Forubee County, Mississippi - Formal Consultation - Red-  
Cockaded Woodpecker

1. None
2. No jeopardy. No comments from Navy.

Issue: Is the Endangered listing of the red-cockaded woodpecker appropriate?

Response: The Service is aware of the concerns over the current listing of the red-cockaded woodpecker as Endangered. We share in this concern. Biological information on this species is not current. Some biologists feel that the woodpecker is more numerous than indicated at the time of listing. Other biologists are convinced that the listing is proper. In an effort to obtain information on the present biological status of the woodpecker, the Service has scheduled a status survey which is due to be initiated and completed in fiscal year 1979. Should the data from this survey indicate that the species is no longer Endangered, the Service will propose that it be listed as Threatened or removed from the list.

ISSUE: HOW MUCH CRITICAL HABITAT FOR THE LEOPARD DARTER WOULD BE  
AFFECTED BY THE PROPOSED LUKFATA PROJECT?

RESPONSE: The leopard darter is known only from the Little River system of Oklahoma and Arkansas. Of the six major tributary stream systems which comprise the Little River system, including the Little River proper, Glover River, Mountain Fork River, Rolling Fork River, Cossatot River, and Saline River, The leopard darter has been found only in the Little River, Glover River, Mountain Fork River and Cossatot River.

Although sampling efforts may not have been exactly equal in all stream systems, it appears clear that the Glover River supports the largest population of this species. To date, 55 specimens out of the total of 165 have been collected from the Glover River. Biologists in 1972 initially stated that P. pantherina was more numerous in the Glover River than in any other Little River tributary. Eley, a Corps of Engineers biologist, in 1975 corroborated the earlier statement in reporting, "the largest population apparently exists in the Glover Creek (:River) Basin." Adequate collecting has been effectuated on all six Little River tributaries at this point to clearly state that the Glover River supports the largest population of the leopard darter of any other Little River tributary.

We do not know where the figure of 3 percent came from since the Corps of Engineers biologist (R.L. Eley in 1975) stated that impoundments would reduce potential habitat by at least 12 percent. The catch in this statement is the use of the words "potential habitat". On examination of their data it was discovered that their "potential habitat" included

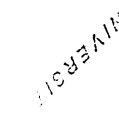
635 kilometers of streams in two river systems where the leopard darter has never been found. Their "potential habitat" also included approximately 2400 kilometers of tributaries to rivers where the darter has never been found. Another gross error in their calculation of habitat effected by impoundment is their assumption that a linear mile of habitat in the upper reaches of the Glover River is equal to a mile habitat in the downstream area. This is like saying that one mile of an unpaved county road is equal to one mile of eight lane I-495 in ability to accommodate traffic. The Service would estimate that more than 75 percent of the leopard darters essential habitat will be eliminated or adversely effected by the proposed Lukfata project.



ISSUE: What is the status of the critical habitat listing on the woundfin minnow and what effect will the woundfin have on projects proposed for the Virgin River in Utah?

The woundfin minnow has become endangered due mainly to habitat modification and the introduction of a competitive exotic species, the red shiner. The species was listed in October of 1970. A recovery team working on the woundfin prepared a critical habitat recommendation which was received by the Fish and Wildlife Service Regional Office in Albuquerque, New Mexico, in April 1976. Following review by the FWS Regional Office it was sent out to concerned States and Federal agencies. After responses were received from the States and Federal agencies, the Critical Habitat recommendation was sent to the Office of Endangered Species for review and consideration for a proposed rulemaking. On November 2, 1977, the FWS published (F.R. 40 p. 57329) proposed Critical Habitat of the woundfin. Comments on this proposal have been received and are being reviewed to determine future actions.

There are two projects on the Virgin River that could affect the habitat of the woundfin. The first of these projects is the Warner Valley Water Project which is designed to provide water for a coal-fired power plant to be constructed near St. George, Utah. On April 3, 1978, the Service issued an official biological opinion to the Bureau of Land Management on the Warner Valley Project. In this opinion the Service recommended minimum flows which would be necessary to prevent an adverse effect on the woundfin. These minimum flow



recommendations have been challenged by advocates of the water project.

On June 19, 1978, the Regional Director, Denver, and other Service personnel met with proponents of the project, representatives of the Bureau of Land Management, and State officials. At this meeting, the Service agreed to review the hydrological data with hydrologists from the State and the power project proponents.

Thus, the consultation process is continuing. At this point, there is every reason to believe that a water project that would provide both sufficient water for the Warner Valley Power Plant and minimum flows for the woundfin minnow is feasible.

The second project on the Virgin River that could affect the woundfin is the Laverkin Springs Desalinization Project proposed by the Bureau of Land Management. On June 6, 1978, a biological opinion was issued to <sup>Reclamation</sup> BLM that stated that there would be no jeopardy to the woundfin, provided certain modifications, again related to minimum flow, were incorporated into the project.

On June 26, 1978, the FWS Regional Director, Denver, sent a letter to Reclamation confirming a meeting to be held in the near future between Service personnel in our Salt Lake City Area Office and Reclamation representatives to discuss these recommendations.

ISSUE: What is the status of consultations and litigation on Libby Dam in Montana?

RESPONSE: The Corps of Engineers has proposed to construct a re-regulation dam some 10 miles below Libby Dam. Threshold consultations have been conducted with the Corps of Engineers and additional information has been requested regarding eagle habitat in the proposed project area. The Corps has asked that the Service consider a haul bridge to be used to haul material to the dam site as a separate project. The Billings, Montana Area Office of the Service informed the Corps by letter on April 21, 1978, that there would be minimal impact on the eagle and its habitat from the construction of the haul bridge, but stressed that under the interagency cooperation regulations (issued Jan 4, 1978), "good faith consultation shall preclude a Federal agency from making an irreversible or irretrievable commitment of resources which would foreclose the consideration of modifications or alternatives to the identified activity or program." The Corps has proceeded with work on the bridge. The Corps has been sued by the Libby Rod and Gun Club and the Montana Wilderness Association to enjoin their work on the haul bridge.

ISSUE: REPORTS OF FWS POISONING SQUAWFISH IN THE STATE OF WASHINGTON

RESPONSE: The Colorado Squawfish (Ptychocheilus lucius), the largest member of the minnow family in North America, was at one time found throughout the mainstem and large tributaries of the Colorado River from southwestern Wyoming to the Gulf of California. Today it is found only in portions of the Colorado River in the States of Colorado and Utah. There are several other squawfish species which do occur in the Pacific Northwest, but none are listed or being considered for listing. In addition to the Endangered squawfish being a separate species, Dr. Carl L. Hubbs, one of the foremost ichthyologist in this country, has suggested that the listed species may indeed be a distinct genus, separate and apart from the other known squawfish.

The Columbia River squawfish (Ptychocheilus oregonensis) is a large carnivorous cyprinid that is extremely abundant in the Columbia River drainage where much of the fishery economy is salmonids. This species, known to compete with and prey upon salmon, is the subject of the aforementioned poisoning efforts in the State of Washington, and is partially financed with Dingell-Johnson funds. Between 10-20 bodies of water in that State, including lakes and ponds, are treated with rotenone to remove the Columbia River squawfish, carp, chubs, dace and, in certain instances, bluegill. In the lakes and ponds the squawfish preys on resident trout species.

ISSUE: STATUS JUNIPER SPRINGS CROSS MOUNTAIN PROJECT - COLORADO

RESPONSE: On January 30, 1978, the FWS Regional Director, Denver, Colorado sent a letter to Mr. Roland Fisher, Secretary Engineer, Colorado River Water Conservation District (CRWCD) in response to Mr. Fisher's January 15, 1978, request for a written document on the extent of information exchange between CRWCD and the Service on the Juniper Springs Cross Mountain proposal (FPC No. 2757).

The Regional Director's letter reminded Mr. Fisher that earlier meetings attended by CRWCD were with the Recovery Teams for the Colorado Squawfish and Humpback Chub, and that the teams themselves operate in an advisory capacity - not as a branch of the Service.

The letter addressed a number of general fish and wildlife concerns, and stated that "Our Service is specifically concerned about possible impacts to rare plants and destruction of riparian and terrestrial habitats which will occur in the project area". The letter cited several FPC articles on terms and conditions of issuing a preliminary permit, and established that CRWCD had not yet complied with those articles addressing natural resources and precautions to be taken to ensure their protection.

The Federal Power Commission, the agency responsible for issuing the Federal permit for the project, would be the appropriate agency to initiate section 7 consultation with FWS. To date FPC has not done so. The Service is considering forwarding to FPC a request that the agency initiate consultation in accordance with the recently published Interagency Cooperation Regulations.

ISSUE: What is the status of the Houston Toad Critical Habitat?

RESPONSE: On May 26, 1977, the Fish and Wildlife Service proposed nine areas in Bastrop, Burleson and Harris Counties, Texas as Critical Habitat for the Houston toad (Bufo houstonensis). On January 31, 1978 the Service issued a Final Rule which determined the areas in Bastrop and Burleson Counties as Critical Habitat for the toad. At the same time the Director announced that 2 of 7 areas in Harris County were not suitable habitat for the Houston toad and were to be removed from further consideration. Five areas remained proposed pending future study. Recently the Service has decided that 3 of the 5 remaining areas should no longer be considered, since a recent survey failed to disclose the species' presence. Thus, only two areas in Harris County remain proposed as Houston toad Critical Habitat, one is adjacent to Ellington Air Force Base and the other is owned by the Santa Fe Railroad Company.

This past year 2,500 toads were raised in captivity and released in the Bastrop County locality.

Issue: What is the status of the U.S. Fish and Wildlife Service's proposal to list 2 fishes from the Cahaba River in Alabama?

On November 29, 1977, the Service published a proposed rulemaking in the Federal Register to list 2 fish on the Cahaba River in Alabama as Endangered. The 2 fish proposed for listing were the Cahaba shiner and the goldline darter. At the same time, the Service also proposed establishing the critical habitat for these two species. The combined proposed critical habitat for the 2 species would include all of the main channel of the Cahaba and Little Cahaba rivers between Highway 31 near Helena, Alabama, and Highway 82 at Centreville, Alabama, approximately 57 miles.

Questions have been raised regarding the sufficiency of data used in making the proposal, and particularly relating to statements made in the proposal relating to water quality. The statements pertaining to water quality are based on several years of observation and study by Dr. James Williams and other biologists as well as a report on the Upper Cahaba River by the U.S. Environmental Protection Agency (EPA), Region IV, Surveillance and Analysis Division, Ecology Branch, in September 1976. As stated by EPA, the purpose of this report was to "characterize the aquatic flora, fauna, and habitat and identify sources of pollution and their effects on Upper Cahaba River and its tributaries." The pollution problem is laid out clearly and to the point in the summary of that report (page iv): "The 96 kilometers of the Cahaba River lying between Echo Lake upstream and Buck Creek downstream were included in this



study. The major pollution sources encountered in this study were oxygen-demanding wastes from sewage treatment plants, turbidity and siltation from construction, and runoff from strip mines. These perturbations were reflected in a degradation of aquatic faunal communities and a reduction in the aesthetic appeal of the river."

Information on the fishes was taken from a report on "Endangered Plants and Animals of Alabama" published jointly by the Game and Fish Division of the Alabama Department of Conservation and Natural Resources and the Alabama Museum of Natural History (October 1976). This report was based on years of observations and field experience of 20 southeastern ichthyologists. Each species was reviewed and evaluated by the biologists in terms of distribution, population level, habitat needs, threats to habitat, and other factors which would need to be considered in determining the need for Federal protection.

In preparing the proposed listing, Service biologists also made use of several other published and unpublished reports on the fish and the Cahaba River ecosystem.

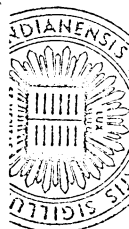
Under the Endangered Species Act, the Service is mandated to make decisions based on the best scientific and commercial data available. The Service believes that the information used was the best available at the time the proposed listing was made. However, in view of the public interest in this proposed rulemaking, the Service extended the comment period for an additional 60 days, and as requested held a public hearing on the matter.



We also asked our Cooperative Fishery Unit at Auburn University to conduct a study of the Cahaba shiner before taking any further action on that species.

Finally, we have agreed to have the final rulemaking package reviewed for adequacy and accuracy by professional biologists outside of the Office of Endangered Species before the final rulemaking.

Statements were also made in testimony relating to the Fish and Wildlife Service's Biologist, Dr. James Williams, who drafted the proposed rulemaking, and his relationship to the Alabama Conservancy, a conservation group concerned about development projects along the Cahaba River system. Dr. Williams was asked to participate on the Alabama Conservancy Cahaba River Study Team late last year. He did agree, if requested by the team, to provide data in the Service's files on the candidate Endangered and Threatened species in the Cahaba River system. This is public information available to any interested party. He informed the Alabama Conservancy by letter on January 12, 1978, that he would not participate in the activities of its Cahaba Study Team in any way. Dr. Williams was asked and accepted the invitation to conduct a workshop on Endangered species at the Alabama Conservancy annual meeting. He later cancelled his participation in the meeting due to a pressing workload in the Office of Endangered Species. Dr. Williams is a professional biologist whose qualifications and integrity are beyond question. The Fish and Wildlife Service fully supports his work and his conclusions to this point in time.



Issue: What are the facts on the Mississippi sandhill crane land acquisition?

Response:

- o Listed as an Endangered species: June 4, 1973.
- o Recognized as a subspecies in 1972 (J.W. Aldrich, Biological Society of Washington, vo. 85, pp. 63-70).
- o Critical habitat, emergency declaration: June 30, 1975, approximately 100,000 acres.
  - Proposed critical habitat: September 3, 1975, approximately 100,000 acres.
  - Final critical habitat designation: August 8, 1977, 26,000 acres.
- o Acres proposed for acquisition:
  - FWS: 14,292.0
  - DOT: 1,840.0 (including lands already in the highway right-of-way)
  - TOTAL: 16,134.0
- o Current status of land acquisition:
  - Acquisition to date: 8,625 acres
  - Cost to date: 7,167,600
  - Remaining:
    - FWS: 5,669 acres @ \$9,700,000 (LWCF, FY 1979 budget)
    - DOT: 1,840 acres @ \$4,000,000 (In DOT FY 1979 budget)
    - TOTAL: 7,509 acres @ \$13,700,000

ISSUE: WHAT IS THE STATUS OF CORPS OF ENGINEERS DICKEY-LINCOLN SCHOOL LAKE PROJECT IN MAINE AND THE FURBISH LOUSEWORT?

RESPONSE: Mention has been made about the conflict between the Dickey-Lincoln project and the Lousewort.

The Furbish lousewort was listed officially as Endangered on April 26, 1978. Critical Habitat has not been determined.

Prior to listing of the lousewort, the Corps and the Service entered into an informal consultation process beginning on November 24, 1976. This consultation process resulted in obtaining valuable information needed by the Corps and the Service relative to the impacts of the project on the lousewort.

On May 5, 1978, after listing of the lousewort, the Corps requested section 7 consultation. On June 15, 1978, the Service's consultation team met with the Corps to discuss the project and available biological data. The Service has rendered its final Biological Opinion.

The Biological Opinion states, in part, that the project is likely to jeopardize the continued existence of the Furbish lousewort unless a conservation program is developed and successfully implemented by the Corps, in consultation with and with the assistance of the Service. The various actions that must be included in the conservation program are summarized as follows:



1. Development of information which will lead to a functional understanding of the habitat needs and propagation techniques of the Furbish lousewort.
2. Acquisition and protection of existing habitats below the project impoundment area currently supporting lousewort populations.
3. Acquisition of habitat identified as capable of supporting new populations of louseworts.
4. Establishment of new, self-sustaining colonies through transplantation, seeding or other appropriate techniques.
5. Obtaining better information on what the effects will be of downstream flows, after construction of the project, on the lousewort and its habitat.
6. Development of a monitoring program which will be capable of detecting any changes in lousewort biological status, such as habitat changes, population increases or decreases, and microclimatic conditions.

Issue: What is the status of section 7 consultation on the Mahaweli Ganga Development Project, Sri Lanka?

Response: On December 6, 1977, the Fish and Wildlife Service received a letter with accompanying documents from Mr. Albert C. Printz, Jr., Environmental Coordinator for the Agency for International Development (AID), Department of State, requesting our review of an Environmental Assessment of Stage II of the Mahaweli Ganga Development Project prepared by AID in cooperation of the Government of Sri Lanka. The project contains two proposals which involve development of intensive, year-round agriculture in Sri Lanka through water resource management. This would entail construction of earthen dam reservoirs and canal systems to service areas for agricultural purposes, and relocation of rural families displaced by that construction.

Upon review of that document, the Service determined that the proposed action may affect the Asian elephant, an Endangered species, through extensive habitat modification throughout its range in Sri Lanka. AID was then informed of that determination by a letter dated March 10, 1978, in which the Service requested that AID initiate section 7 consultation pursuant to the regulations entitled "Interagency Cooperation" as published in the Federal Register on January 4, 1978. Consultation is ongoing.

Issue: What is the status of the Tennessee Valley Authority's Duck River Project (Columbia Dam), Tennessee, and various Endangered species?

Response: On February 16, 1977, the U.S. Fish and Wildlife Service rendered a Biological Opinion pursuant to section 7 consultation requested by TVA relative to the impact of the proposed Columbia Dam on listed species. The Biological Opinion was that the Columbia Dam segment of the Duck River Project in Tennessee would be likely to jeopardize the continued existence of the Endangered birdwing pearly mussel and the Cumberland monkey-faced pearly mussel. The dam was started in the summer of 1976, and an estimate is that as of January 1977, \$20 million dollars would have been expended on the project; the 1976 project cost was approximately 180 million dollars.

There are 3 additional species of mussels listed as Endangered which are known to occur in the Duck River: the orange-footed pimpleback, the turgid-riffle shell, and the pale lilliput pearly mussel. There are 11 species in the Duck River system which may be listed in the immediate future.

TVA has applied to the Corps of Engineers for a section 404 permit. Construction of structures affecting the river flow has been temporarily halted pending receipt of the permit. Other work is ongoing.

ISSUE: ARE THERE ANY LISTED OR CANDIDATE ENDANGERED SPECIES IN THE  
TENNESSEE TOMBIGBEE WATERWAY?

RESPONSE: There are no listed Endangered or Threatened species in the Tombigbee River. There are several mussels, fishes and turtles which are being reviewed for possible listing that occur in the Tombigbee River system.

The Service published a Notice of Review (F.R. Vol.40, No. 53, p.12297) on March 18, 1975, of 29 fishes of the southeast. Three species (Crystal darter, freckled darter and frecklebelly madtom) occur in the Tombigbee River and were included in the proposal. The Service reported to Congress in October 1975 (Hearings on Endangered Species Act, Serial No. 94-17 House Committee on Merchant Marine and Fisheries, see page 84) that there were several mollusks under consideration for the Endangered or Threatened species status from the Tombigbee River. More recently the Service published (FR 42, 108, 28903) a Notice of Review of 12 turtles including 2 (Alabama red-bellied turtle and the black-knobbed sawback) which are known to occur in the Tombigbee River system. There are other species which are currently on the State list in Alabama and Mississippi that may need to be considered for future listing.

We anticipate completion of these reviews and status determinations within 12 months. If our review indicates that these species meet the criteria for listing under the Act, the Service will propose them as either Endangered or Threatened.

ISSUE: IS FLORIDA OVERLOADED WITH ENDANGERED SPECIES CRITICAL HABITAT?

RESPONSE: It has been mentioned that so much area in the State of Florida is now covered by Endangered species Critical Habitats that a power utility there had found it impossible to locate power-line right-of-ways. The species whose Critical Habitats were mentioned are the Florida Everglade kite, Florida manatee, American crocodile, dusky seaside sparrow and Cape Sable seaside sparrow. Although it may be admitted that Florida is a State rich in Endangered species and their Critical Habitats, by the same token it must be pointed out that a relatively small area is affected. The Service estimates that approximately 5 percent of the State of Florida in widely scattered areas is Critical Habitat. It is the Service's experience that almost all conflicts between Federal agency actions, fundings, or authorization and Endangered or Threatened species Critical Habitats can be resolved through the section 7 interagency consultation process. For example, the successful resolution of the recent apparent conflict between the Miami Jetport training runway and the Florida Everglade kite should indicate that the concerns of the utility were over-exaggerated.

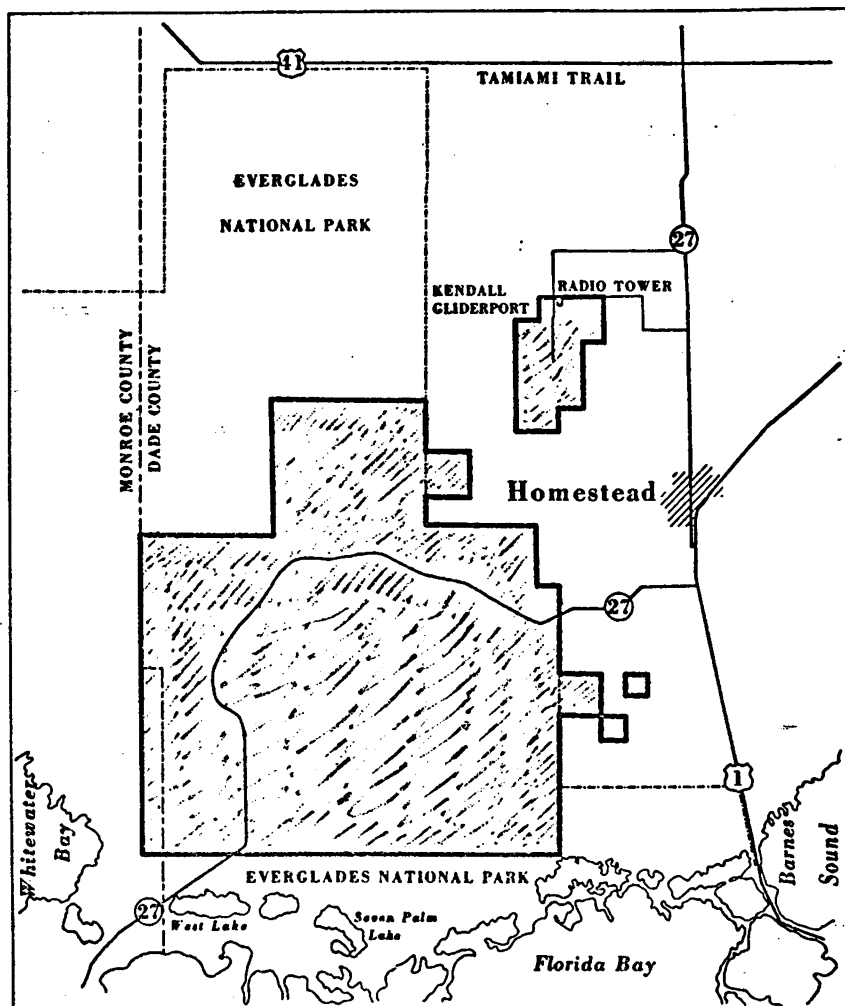
The specific instance cited by the Florida Power and Light Company concerned the Department of the Interior denying permission to that Company to cross approximately one mile of the Loxahatchee National Wildlife Refuge with a transmission line, or alternatively, to arrange a land exchange.



The right-of-way was denied because the area to be crossed was potentially habitat for management and recovery of the Everglade kite. This area was also under consideration for a Critical Habitat determination. Also it is known that kites are intolerant of tall objects on the horizon of their habitat. The Florida Power and Light Company would not consider an underground line. The proposed route would have crossed one of the few fee title tracts of land in the refuge and was not considered compatible with the wildlife objectives of the refuge, a requirement necessary to be met under the National Wildlife Refuge Administration Act. Land exchange was not acceptable as the lands offered were not contiguous and were unsuitable for management as a unit of this refuge.

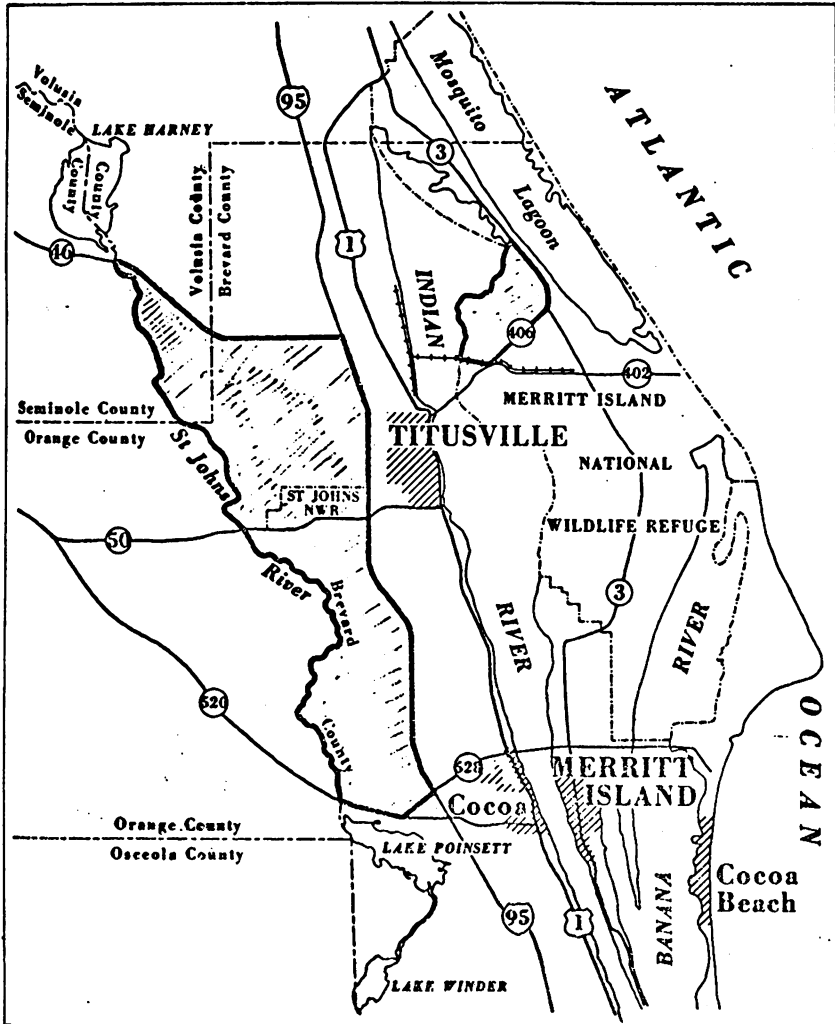
## CAPE SABLE SPARROW

Dade and Monroe Counties, FLORIDA

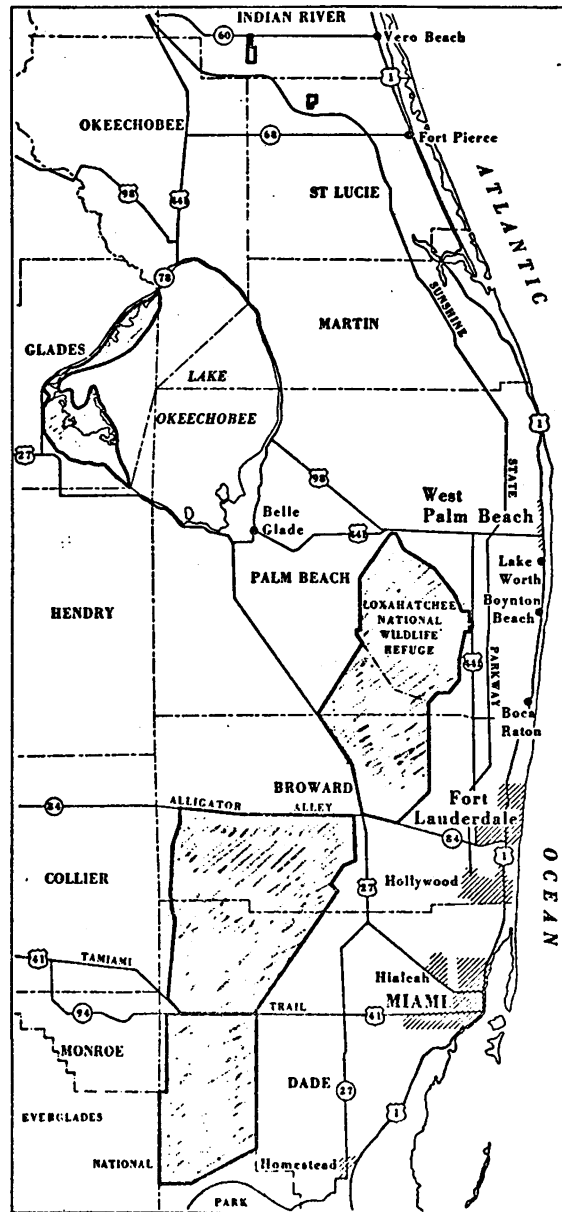


# DUSKY SEASIDE SPARROW

Brevard County, FLORIDA

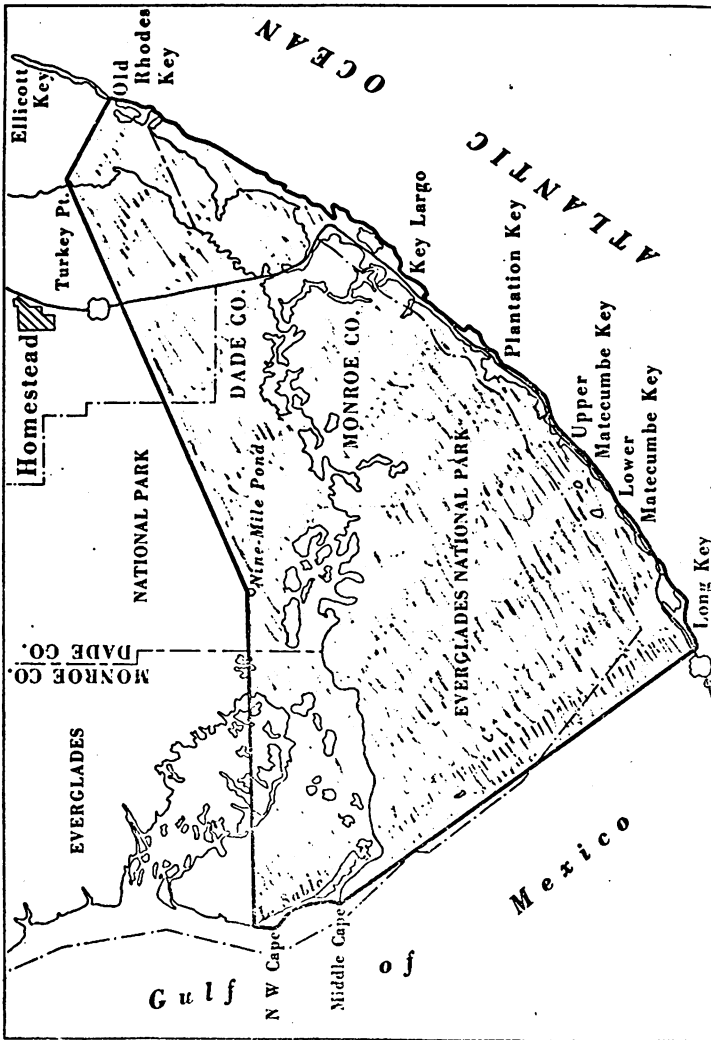


FLORIDA EVERGLADE KITE  
FLORIDA



# AMERICAN CROCODILE

Dade and Monroe Counties, Florida



Issue: What are the facts regarding snail darter transplant efforts?

Response:

- June 1975 - October 1975 (prior to listing of species):

Prior to listing snail darter as an Endangered species TVA transplanted some 500 fish from the Little Tennessee River to the Hiwassee River and some 60 fish to the Nolichucky River.

-- June 3-6, 1975, first transplant.

-- September, October 1975, additional transplants.

- Snail darter listed as an Endangered species:

Final rulemaking published October 9, 1975, effective November 10, 1975.

- February 1976:

FWS approved TVA request to transplant additional darters (approximately 171) from Little Tennessee River to Hiwassee River.

- February 28, 1977:

TVA applied for permit to transplant snail darters to additional rivers.

- July 6, 1977:

FWS denied TVA application to transplant snail darters to other sites.

At that point in time some 700 darters had been transplanted to three sites in the Hiwassee River.

Application rejected on grounds that population level of the species in the Little Tennessee River was so low that removal of more fish could jeopardize the continued existence of the species. All of the transplants from the Little Tennessee River took place before TVA, the State of Tennessee and the FWS were aware of the complex life cycle of the snail darter. Once it became apparent that the dam was preventing recruitment

of snail darters the Service took the position that any further reduction in the Little Tennessee River population of snail darters could jeopardize the continued existence of the darter in its Critical Habitat. The prior TVA transplant operations resulted in a drop in the abundance index of approximately 50 percent at both the Coytee Spring and Toliver Island areas on the Little Tennessee River. Further, most of the proposed transplant areas outside of the Hiwassee River were considered marginal habitat for the snail darter.

• Other relocation actions:

1977-1978 relocation of approximately 1,286 darters from below Tellico Dam upstream. Snail darters carried downstream through the dam and stranded below the dam have been captured and relocated upstream.

Issue: How is the snail darter transplant doing?

Response: Although it is probably true that most snail darters in the Hiwassee River were hatched and raised in this stream, the outcome of the snail darter abundance estimates, provided by TVA, at the transplant sites in the Hiwassee are as follows:

| Hiwassee River<br>Transplant Site<br>Number | March 1976* | March 1977* | December 1977* |
|---|-------------|-------------|----------------|
| 1   | 0.40        | 0.40        | 0.20           |
| 2   | 0.87        | 0.20        | 0.13           |
| 3   | 0.10        | 0.40        | 0.00           |

---

\*Mean number of snail darters observed per transect censused.

These data indicate that the snail darter has decreased in abundance at all Hiwassee transplant sites since the original transplants (June 1974-February 1976).

While we hope the effort will be successful, it is too early to predict whether or not the snail darter has the ability to reproduce and thrive over the long term in the Hiwassee River. Historically, the Hiwassee River was probably darter habitat. For reasons not yet known or understood, the native darter population in this river disappeared. These unknown limiting factors could thwart the success of the present transplant population.



**ISSUE:** Chronology of events related to the snail darter and the Tellico Dam Project, Tennessee

**RESPONSE:**

**OCTOBER 1966** - Tellico Dam Project Authorization as a multipurpose water resource project.

**MARCH 1967** - Tellico Dam Construction Initiated.

**NOVEMBER 1971** - NEPA Suit Filed Against TVA. Landowners and Conservationists filed suit against TVA on the ground that TVA had failed to comply with the requirements of NEPA. A preliminary injunction was obtained which halted the project until 1973. The revised EIS which TVA submitted in 1973 was accepted by the courts and the injunction dismissed in the summer of 1973. Construction began in the fall of 1973. The Fish and Wildlife Service submitted comments on the Draft Environmental Impact Statement on September 22, 1971.

**AUGUST 12, 1973** - Discovery of the Snail Darter. Drs. David Etnier and Robert Stiles of the Zoology Department of the University of Tennessee discovered the snail darter in the Little Tennessee River at Coytes Springs near river mile 7, Loudon County, Tennessee.

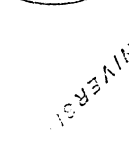
**SEPTEMBER 1974** - Life history studies of the Snail Darter were initiated by biologists at the University of Tennessee at Knoxville, Tennessee, under a three year contract from the TVA.

**FALL 1974** - TVA Biologists Visit FWS in Washington, D.C., to discuss the Endangered Species Act and some of their activities involving Endangered Species.

**NOVEMBER 1974** - Snail Darter Status Report Submitted to FWS. Dr. David Etnier, ichthyologist at the University of Tennessee, submitted a brief status report on the snail darter based on information available at that time. The report indicated that the major threat to the snail darter was impoundment and siltation of the habitat. FWS initiated an in-house review of the situation to determine whether the snail darter was a distinct species and if it was Endangered.

**DECEMBER 3, 1974** - Letter from Secretary Morton to all Federal agencies informing them of their responsibilities under the Endangered Species Act of 1973.

**JANUARY 20, 1975** - FWS Petitioned to List Snail Darter. Three individuals petitioned the Department to list the snail darter as an Endangered Species according to the expedited emergency procedures of the Endangered Species Act of 1973. After a preliminary review by biologists in the Office of Endangered Species, a notice was published in the Federal Register acknowledging the receipt of the petition and initiating a review of the snail darter situation. A letter to the TVA, from the Department dated March 7, 1975, formerly



notified the TVA of the petition to list. The letter also pointed out to the TVA their responsibilities under the provisions of the Act. TVA's response on March 12, 1975, indicated they had reviewed and were continuing to review the impacts of their project on the snail darter. They also questioned the specific validity of the snail darter and the restricted nature of its distribution.

MARCH 12, 1975 - Published a notice of intent to review the situation (40 FR, No 49, p. 11618) based on an examination of the documents submitted by the petitioners.

JUNE 1975 - First TVA Snail Darter Transplant. The first snail darter transplant operation to the Hiwassee River by TVA took place 3-6 June 1975. The FWS was not informed of this operation until after it had taken place. Additional transplants were made in September and October 1975.

JUNE 1975 - FWS Proposal to List Snail Darter as Endangered. After thoroughly reviewing the petition, the Office of Endangered Species drafted a proposed rulemaking to list the snail darter as an Endangered Species. The proposal (17 June 1975, Federal Register Vol. 40, pp. 25597-25598) carried a 60-day comment period during which TVA submitted a rather large package of comments and miscellaneous documents recommending the snail darter not be listed. Comment period closed 18 August 1975.

SEPTEMBER 8 - TVA transplanted an additional 361 fish from the Little Tennessee River to the Hiwassee. An additional 61 fish were transplanted from the Little Tennessee to the Nolichucky River. To date 500 plus individuals have been transplanted to the Hiwassee River. Some reproduction has been observed but it is not possible to determine the success of this transplant until 5-10 years of observations have been made.

OCTOBER 9, 1975 - Publication of the final rulemaking determining the Snail Darter to be an Endangered Species. All comments received on the proposal were reviewed and a summary published along with the final determination (40 FR, NO. 197, pp. 47505-47506).

OCTOBER 1975 - FWS Requested Formal Consultation with TVA. The Fish and Wildlife Service requested that the TVA enter into formal consultation with FWS. TVA responded and indicated that they would contact the FWS in the near future.

DECEMBER 16, 1975 - FWS Publishes (Federal Register, Vol 40, pp 58308-58312) Snail Darter Critical Habitat Proposal. The TVA's response to the proposed delineation of Critical Habitat for snail darter recommended that no action be taken until further studies were completed.

FEBRUARY 1976 - TVA transplants an additional 171 Snail Darters to the Hiwassee River under an FWS letter of interim authority. To date 700 plus snail darters have been transplanted to the Hiwassee River.

FEBRUARY 1976 - First Formal Consultation Meeting. FWS met with TVA on February 14, 1976, in Tennessee to discuss the Tellico Dam Project and its impact on the snail darter. The TVA transplant project was reviewed and discussed.

FEBRUARY 1976 - Suit Brought Against TVA for Violation of Endangered Species Act.

FEBRUARY 20, 1976 - End of comment period of the proposal to determine a portion of the Little Tennessee River as Critical Habitat for the Snail Darter.

FEBRUARY 25, 1976 - Court hearing in the U.S. District Court, Knoxville, Tennessee. The court action was brought by Hiram Hill against TVA for violation of the Endangered Species Act. Judge denied request for a temporary injunction but did set a speedy trial date.

APRIL 1, 1976 - FWS Published Final Rulemaking on Snail Darter Critical Habitat. The Fish and Wildlife Service determined the Little Tennessee River between river mile 0.5 and 17 to be Critical Habitat for the snail darter.

APRIL 23, 1976 - Trial date, Hiram Hill vs. TVA in the U.S. District Court, Knoxville, Tennessee.

APRIL 27, 1976 - Region 4 (FWS) requested TVA to initiate Section 7 Consultation.

MAY 1976 - Judge Robert Taylor issued a decision denying the request for a permanent injunction on completion of Tellico Dam. The Court's refusal was based upon an analysis of the equities.

MAY 13, 1976 - TVA stated their belief that consultation under Section 7 had been completed.

TVA informed that prior interaction did not constitute Section 7 consultation and FWS, Region 4 requested TVA to initiate consultation.

AUGUST 18, 1976 - Section 7 Consultation, as requested by TVA, is initiated; and a FWS consultation team, consisting of Harold O'Connor, Robert Jacobsen, and Ronald Lambertson, is appointed.

AUGUST 24, 1976 - TVA, FWS and TWRA reviewed the history of Tellico Dam and discussed the consultation problems. TVA lawyers informed FWS that Tellico Dam will be closed January 1, 1977, and that TVA would consider only transplant activities as a darter preservation strategy.

SEPTEMBER 2, 1976 - FWS, TVA, and TWRA met in Norris, Tennessee to discuss FWS's tentative biological opinion and discussed sighting of Snail Darter immediately below the dam site. TVA will apply for emergency permit to relocate the fish.

OCTOBER 12, 1976 - Biological opinion of FWS on the effects of Tellico Dam on Snail Darter determined that operation of Tellico Dam would jeopardize the continued existence of the listed species and result in the destruction of its Critical Habitat.

JANUARY 31, 1977 - Decision from U.S Court of Appeals for the Sixth Circuit. The court reversed the lower court's decision and issued a permanent injunction halting all activities incident to the Tellico Dam project which may destroy or modify the Critical Habitat of the Snail Darter.

FEBRUARY 28, 1977 - TVA petitioned FWS to delist the Little Tennessee River as Critical Habitat for Snail Darter and applied for a permit to transplant Snail Darters.

JULY 6, 1977 - FWS denied TVA application for permit to transplant Snail Darters from the Little Tennessee River to other sites, stating that population level of the species in Little Tennessee was so low that removal could jeopardize its continued existence.

NOVEMBER 14, 1977 - TVA requested information concerning the status of its February 28, 1977, petition to delist the Snail Darter's Critical Habitat and its permit application to transplant the fish.

DECEMBER 5, 1977 - TVA's petition to delist the Snail Darter's Critical Habitat was formally denied.

1977-1978 - Relocation of Snail Darter from below Tellico Dam upstream in the Little Tennessee River. Snail darters carried downstream through the dam and stranded below the dam have been captured and relocated upstream. To date, 1,286 darters have been relocated in the Little Tennessee River.

JANUARY 1978 - Snail Darter Population levels in Little Tennessee River. Recent surveys indicate that the population in the Little Tennessee River is 25% to 50% of its former abundance.

MARCH 16, 1978 - DOI requested TVA to reinitiate Section 7 consultation and consider the alternative of converting the project to a free-flowing stream-oriented economic, agricultural, recreational, and cultural development project.

MARCH 31, 1978 - Chairman Wagner agrees to consultation, but not on subjects other than transplants or delisting of critical habitat.

APRIL 6, 1978 - TVA Director Freeman suggest a "dry dam" project

APRIL 17, 1978 - Secretary Andrus acknowledged TVA's acceptance of offer to undertake consultation.

JUNE 15, 1978 - Supreme Court Decision upheld the decision of the Sixth Circuit Court of Appeals.

ISSUE: UPDATE ON PLANTS - JUNE 26, 1978

RESPONSE: Status of plant listing procedures; 3,191 native taxa under consideration:

1,404 of total under notice of review (for possible Threatened status) (April 21 and July 1, 1975 and August 11, 1977).

1,766 of total proposed as Endangered (June 16, 1976). An additional 88 foreign plants were proposed Endangered September 26, 1975.

Over two-thirds of those proposed are in four States: Hawaii (893), California (286), Texas (108), and Florida (83). See attached map for distribution per State.

Most of the plants are narrowly endemic, rather than being widely scattered. Many States are developing programs and data, such as California Native Plant Society and various State departments of Natural Resources, and some States have passed Endangered plant laws and hired State botanists (Hawaii, California). Recovery options for plants are frequently greater than for animals, because many plants can be propagated and transplants are possible. Thus the problems of plant conservation are being accepted and can be dealt with in an effective manner.

Seventeen native plants are now listed as Endangered (15) or Threatened (2) (August 11, 1977 and April 26, 1978).

Critical Habitats have been proposed for two plants (February 8, 1977).

Other qualifying plants will be listed as their status is determined. For example, in Hawaii the Governor provided a list of those candidate plants thought to be under highest threat, and the Service currently is developing data especially for listing those qualified in this group.

Main differences for plants in Act:

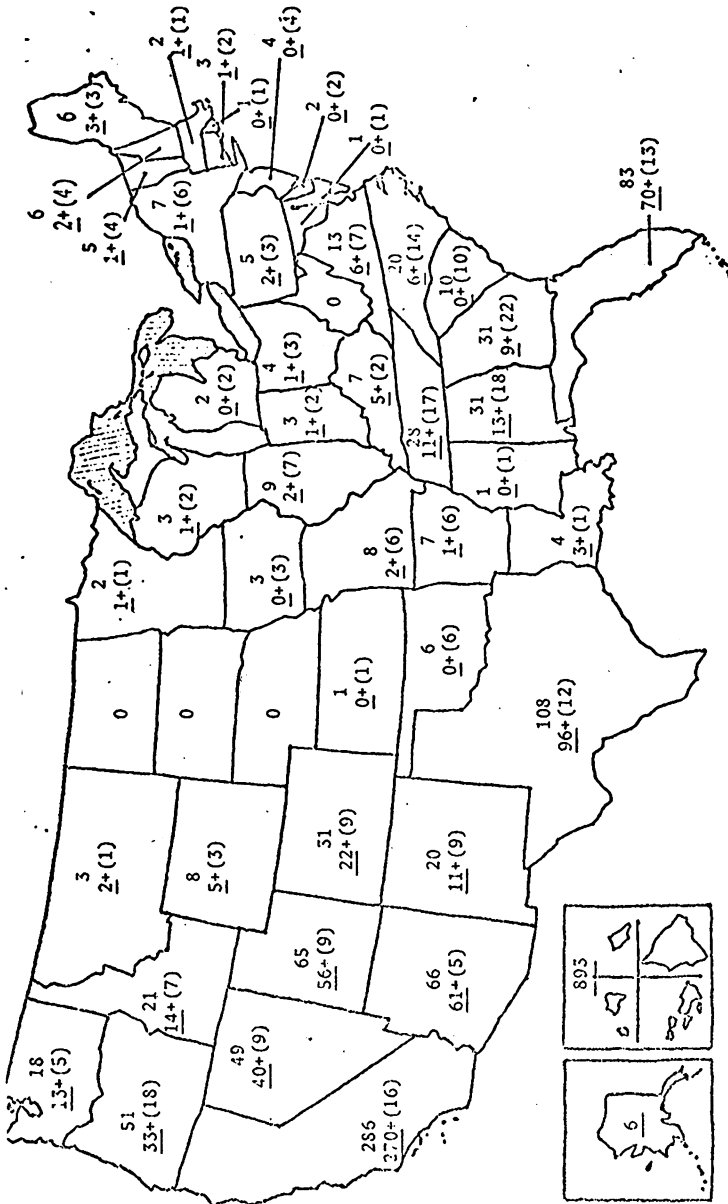
- A. Sections 4, 7, 10, and 11 are basically or exactly the same for plants and animals.
- B. Section 3. Plant populations not covered; import/export enforcement authority is with Secretary of Agriculture (APHIS).

Section 5. Land acquisition possible only for plants on Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Section 6. Plants not included in Cooperative Agreements (6(c)).

Section 8. Plants not included in encouragement of foreign programs (8(b)).

Section 9. No taking prohibitions for plants.



Proposed Endangered plants (see legend, next page)

Figure 1. Distribution of proposed  
endangered plant taxa in U. S. A.

(compiled from June 16, 1976 Federal

Register). Legend: 13; 6 + (7)

means 13 total; 6 endemic to the  
state. (Figure after U. S. Forest

Service document.)



ISSUE: What is the Service's position on use of captive reared Endangered species for falconry, and on allowing interstate transportation and exchange of raptors for breeding and falconry?

A primary purpose of the Endangered Species Act is to conserve fish and wildlife and their ecosystems in the wild. In allowing various activities with captive animals and their progeny the Service must be certain that it will not stimulate a demand from the wild Endangered or Threatened populations. Captive animals and their progeny look just like the wild species. Allowing falconers to fly or engage in other activities with the progeny of captive Endangered peregrine falcons has been a problem because adequate controls have not been available to insure that peregrines from the wild are not taken to supplement the captive held animals.

A classic example substantiating our concern involved an Idaho falconer who was convicted of possessing four Endangered peregrine falcon chicks taken from the wild in Alaska. The case resulted in the individual being fined \$8,000, given a one-year suspended jail sentence and placed on probation for five years.

The Service has been working with industry to develop a numbered leg band marker that will allow positive identification of individual birds and cannot be removed or altered. There have been some problems which should be resolved soon.

On April 14, 1978, the Service published in the Federal Register advance notice of a proposed rulemaking on captive wildlife regulations. The notice describes several alternatives which would relax the restrictions on activities involving listed species. The period of public comment ended June 13, 1978. Over 200 comments were received and are now being evaluated. It is anticipated that a proposed rulemaking will be ready for Federal Register publication in about two months (end of August 1978).

One alternative is to treat certain Endangered species as two separate species; that is, list the wild populations as Endangered and the captive populations as Threatened. The basis for treating captive populations as separate "species" from the wild populations is that they are genetically isolated by reasons of their captivity. Under this alternative, special regulations would be issued which would allow persons holding these captive animals more flexibility and ease in exchange and other commerce in these species. Under such special rules, permit requirements for interstate commerce could be reduced or dropped entirely. Other controls, such as marking of the captive animals, registration or reporting of stocks, could be retained.

Treating captive populations as separate "species" would also allow for the treatment of captive animals under the "similarity of appearance" provision of the Act, the other alternative we are considering. Under the Act and the regulations, the permit

requirements for "similarity of appearance" species are only those necessary to facilitate enforcement and insure the conservation of wild populations of Endangered or Threatened species.

Both of these alternatives differ from the present regulations on captive self-sustaining populations in that the captive populations need not have reached a self-sustaining level, and it is not restricted to just foreign species. Implementation of one of these alternatives would substantially facilitate not only the exchange of animals between zoos, museums and others, but also it would solve the falconers problems with regard to flying captive produced progeny of Endangered falcons.

It is imperative that the Service be able to distinguish between legally possessed birds and those that come from the wild. The basic concern is that there not be an unwarranted take from the wild population. The action presently in progress will accomplish this objective and at the same time allow legitimate wildlife activities.

## STATEMENT OF THE WATER RESOURCES CONGRESS

The Water Resources Congress is a nationwide organization dedicated to the continuous development of water resources for America's future. We believe adequacy of our nation's water supply, for present and future uses, is a necessary ingredient for full employment and economic opportunity for the American people.

We believe water is vital to America's production of food, fiber and energy. Adequate water supplies must be maintained for municipal, transportation, commercial and industrial uses. Flood plain, coastal resources, recreation and wildlife uses should be managed through a sound water policy. Water quality must be reasonably achieved.

The Water Resources Congress supports policies and concepts which effect environmental protection while permitting reasonable multiple use of our natural resources. We believe that Congress had similar concepts in mind when it enacted the Endangered Species Act. However, the wording of Section 7 is so broad that courts have interpreted it to prohibit any Federal Agency from making any modification to any plan which could be detrimental to any critical habitat area regardless of the need or benefits to be realized by the proposed improvement. This has resulted in not initiating some projects and the shut-down of many other needed projects, some nearly completed.

We urge that you and your Committee review the definitions in the Endangered Species Act with a view to making them more precise. Further, that some mechanism be established to resolve the conflicts that may occur between a proposed action and the Act. In this connection criteria should be provided so that economic impacts as well as environmental impacts are equally considered.

We thank you for your consideration.

STATEMENT OF THOMAS E. LOVEJOY, PROGRAM DIRECTOR, WORLD WILDLIFE FUND-  
U.S.

Mr. Chairman and Members of the Subcommittee, I appreciate this opportunity to testify concerning the Endangered Species Act of 1973. I am appearing as Program Director of the World Wildlife Fund-U. S.

While it is understandable that consideration of the Endangered Species Act often comes down to particular cases, it is vitally important to continually remind ourselves of the Act's fundamental justification. If we do not do so it is very easy to fall into a false perception of the Act as generating confrontations between basis human needs and obscure forms of life.

The act is intended to protect endangered species from extinction, not as isolated biological curiosities, but rather as part of ecological systems and processes which are fundamental to the support of man and all life. While it can be argued that once endangered, a species is no longer of great functional importance in the environment, as long as it is not extinct that function can potentially be restored. Perhaps even more important to realize is that every time a species is endangered, it is telling us something very important about environmental degradation; it represents a warning that the planet's capacity to support man is being eroded. When we don't detect a message it is because we are too ignorant, not because there is no message. The Devil's Hole pupfish alerted us to a diminishing water table, as fundamental a resource as we can concern ourselves with. The peregrine falcon warned of wholesale infiltration of our environment and ourselves by chlorinated hydrocarbons and other toxins. Basically, endangered species are symptomatic of perturbed and endangered ecosystems which in turn endanger the basic support system of man himself. A nation unable to protect its wildlife is headed for environmental default---a default which permits of no

refinancing, because biological capital cannot be breathed back to life once extinct.

It is tempting, too, to consider one species more important than another and to thus be led to consider some species expendable. There simply is nobody, nor any group of people, with knowledge sufficient to make such judgements. How can we possibly dream this might be so when more than half of all species have not yet been discovered? The potential direct uses for man of even a single species have not yet been fully explored. It is important to remember that two integral parts of modern medicine, namely vaccination and antibiotics, stem from discoveries based on obscure forms of life that few would have been inclined to defend beforehand. With respect to vaccination, who possibly would have dreamed that the disfigurement of the hands of French milkmaids by cowpox virus would have led to saving of millions of lives, quite probably some of us present today?

Extinction leads to a reduction of those resources most basic to lasting human welfare. Those resources---those species---are in fact the real and only answer to basic human needs. The question is not, as once put to me, a choice between a clam and electricity. It is a choice of a healthy environment plus the potential of that clam's enzymes system to aid in the war against cancer, or a choice of less than one fewer light bulb per capita. While it need not come to that, most of us would choose to live longer.

STATEMENT OF JAMES LYLE, MEMBER TENNESSEE ENDANGERED SPECIES COMMITTEE SUBMITTED FOR SENATE OVERSIGHT HEARINGS ON ENDANGERED SPECIES ACT, SECTION 7

The Endangered Species Act, designed to protect life forms from extinction, has prevented valuable farmland and a beautiful river from being destroyed. Refusing to negotiate in good faith after the snail darter was discovered, TVA instead poured more money into the project in a 24 hour cost-overtime construction schedule, bulldozing the darter breeder area and spending over \$65 million after being informed that the project was in possible violation of federal law. The recent Supreme Court decision indicates that TVA's continued construction was in violation, and there are many additional criticisms of TVA's earlier handling of the project. However, David Freeman, the new TVA Chairman, is now studying project alternatives, and it appears that the project might be changed so that it not only will save the snail darter, but will also better satisfy public needs.

Several studies, including one made for the House of Representatives, have pointed to the tremendous opportunities for developing tourist potential in the Little T valley, which lies adjacent to the most visited national park in the country, the Great Smoky Mountains. Private investors are already buying land on the edge of the park to promote tourism. Developing the project as a river valley would have more diverse uses, and attract many more visitors, than another lake. Scout groups, church groups, and community groups go there for swimming, canoeing, camping, and fishing. Bicycling and horseback riding could easily be promoted. TVA could study solar energy there, open environmental education centers for school children, and do biological research. The land could be leased back to the original owners for farming, it could be opened up to homesteading, and could be the center for the development of more self-sufficient, alternative lifestyles in Appalachia. The point is the project's true value is the land itself.

The dam was less than 1/5 the cost of the total project, and agriculture in the valley would pay for that in just one year. The 17,100 acres of prime river bottomland to be flooded would produce annual crops several times the dollar value of the electricity produced by the dam. TVA predicts a surplus of electricity in the near future, but farmland is becoming more and more scarce. The electricity generated by the dam would produce only 0.1% of TVA's generating capacity, and cost 11 times more than the average kilowatt now produced by TVA. Only by taking twice as much land as was needed for the lake, and reselling it at a high profit, was TVA able to justify the high cost of this project. However, intensive agriculture along the river would generate from \$20-30 million annually, and also produce 300 - 350 immediate jobs. TVA has already begun to develop job opportunities there without the lake. High estimates for jobs from lakeshore development are not likely to materialize, since there are already similar unused sites in that area.

By government estimates, trout fishing in East Tennessee will increase 30 times in the next 15 years. The Little T is the best trout river in the South, and can stock more trout than all other freshwater streams in the state combined. There is a much higher yield from river-stocked trout than from lake-stocked fish, which are less appealing to out of state fishermen.

For hundreds of years this valley was the very center of the Cherokee culture, where it developed from prehistoric times until the early 1800's, before the Cherokee's forced removal from the area on the tragic Trail of Tears. The land is sacred to the Cherokee, holding a deep spiritual essence for them, as well as over 100 important archeological sites, including their principal capital towns and the birthplace of Sequoyah. It contains many burial areas as well. The capital town could be reconstructed into a living village that would illustrate the Cherokee way of life. From the basis of their own experience during the Removal from Tennessee, the Cherokees understand the threat of extinction, and believe it just and fair that the snail darter has prevented the destruction of their homeland.

There are already 22 lakes within a 50 mile radius of Tellico, in an area which once contained hundreds of miles of free-flowing river. Now, only 33 miles of the Little T remain a critical habitat for the snail darter, which requires this unique and vanishing river environment to reproduce. Its existence, now seriously threatened, is an indication that we may lose much more than a small fish. The Endangered Species Act was passed to prevent us from endangering ourselves, and has thus far preserved valuable land for future generations. It appears that in this case TVA can successfully develop much more satisfactory alternatives to the dam. The Act should not be weakened with amendments that will lead to the intentional and permanent destruction of the darter's last remaining natural habitat, the clean and beautiful Little Tennessee River.



1215

## Sierra Club

Rt. 2, Box 130  
Durant, OK 74701

June 22, 1978

Representative Leggett, Chairman  
Committee on Merchant Marine and Fisheries  
Room 1334, Longworth House Office Building  
Washington, D.C. 20515

Dear Representative Leggett:

Please find enclosed a copy of the system being examined by scientists in Texas and Oklahoma which would provide a numerical system for evaluation of an endangered species. This comes to me from the Herbarium at Southern Methodist University by way of Dr. Bill Mahler.

To quote from the last page "The numerical score indicates the status of the species as determined within the previously stated conceptual framework of the evaluation system. It is not a "magic number" but a guide to be used to list plants potentially endangered. The score may also partially indicate our general lack of knowledge about the species, taxa like it, or certain areas of natural science."

I have also sent a copy to the Chief Clerk, Mr. Frances Still, so that you may include it in the record if you so desire.

Sincerely,

*Connie Taylor*

Dr. Connie Taylor,  
Southeast Representative

*A listing of each status endangered species may be found in Endangered and Threatened Plants of the United States by Ayers and Ditzinger. Published 1978 by the Smithsonian Institution and World Wildlife Fund.*

3836 S. Taft Hill Rd.  
Ft. Collins, CO 80521

June 15, 1978

FOR THE RECORD

Testimony for the Oversight Hearings on the Endangered Species Act of 1973 and the International Convention on Trade in Endangered Fauna and Flora.

Mr. Robert L. Leggett  
Congressman  
Committee on Merchant Marine  
and Fisheries  
Room 1334  
Longworth House Office Building  
Washington, D. C. 20515

Dear Congressman Leggett:

This testimony represents the concerns and positions of Fur Takers of America, a national organization of people who are active managers and harvesters of North American fur resources. We are in every way a cross section of Americans in terms of education, vocations, races, creeds and economic levels. We share a staunch belief in the basic tenants and rights of the United States Constitution. We enthusiastically support the organization and tenants of the present wildlife management system based on the state's traditional rights of managing resident species which includes the vast majority of furbearing animals.

We feel the need to register with the Congress many serious concerns we share about the federal intrusion into the state's wildlife management prerogatives via the Endangered Species Act of 1973 and the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Since we are one of the citizens groups who directly carry the burden of the rules and enforcements of these laws, and have felt very heavily the burden of these laws for several years, we feel we deserve some voice in these decisions. We also wish to articulate several complaints regarding how some of the rules implementations of these laws are being affected by the Executive Branch of our government, the Endangered Species Scientific Authority and Endangered Species Office of the U.S. Fish and Wildlife Service.

Fur Takers of America basically feel that both the Endangered Species Act of 1973 and the Convention have a great deal of merit and we strongly support the concept of protecting and conserving legitimately endangered or threatened species. We have done so as an organization and as an interest group since the birth of modern wildlife management. Excessive exploitations of wildlife in the past are deplored by modern fur takers as strongly as any other group.

The basic concerns we have about the Endangered Species Act and Convention are these:

Congressman Robert L. Leggett  
June 15, 1978  
Page two

1. The definitions of terms endangered, threatened and what constitutes "threat as a result of trade" are ambiguous and conjure up in people different meanings based on philosophies and ideologies which are inconsistent with accepted wildlife management principles. The Endangered Species Technical Bulletin, Vol. 11, No. 10, page 3(28) defines Endangered as any species which is in danger of extinction through all or a significant portion of its range.\* We wonder what constitutes "danger of extinction"? This definition depending on a persons imagination, can be used for any existing species and is much too broad. Threatened is defined as "any species which is likely to become "Endangered" within the foreseeable future through all or a significant portion of its range". What conditions make a species "likely to become Endangered"? Again this definition broadens the authority of the agency in charge. These two definitions, depending on a definition of "how many is enough" could be used to list every existing wildlife species. Given the imagination of the present administration of the Endangered Species Office, the Endangered Species Scientific Authority and the "humanitarian protectionist groups" with influence on these offices, we feel there will be many invalidly listed species in the future. The wolf reclassification and the wishes and needs of the people of Minnesota are an excellent example of the misuse of these definitions (2 a-e)(4 a-e). The alligator in Louisiana is another.
2. As a result of ambiguous language in these laws, it allows people with a strong anti-conservation ethic, the legal tools to impress on the users of the resource, unnecessarily restrictive rules, regulations and red tape.
3. The ambiguous language also contributes to an endless requirement for more "data" before decisions can be made and an unnecessarily long process of getting species reclassified. This allows for groups with a protectionist philosophy advantage over those with a conservation ethic. Species can be listed with relative ease but there is an endless requirement for more "data" in order to get them removed, i.e. the recent wolf reclassification took 3½ years and in effect, changed nothing (2-4 all parts). In the Minnesota Timber Wolf Reclassification, as in other efforts to bring about changes in classifications decisions denying petitions, there has been a distinct lack of logical and rebuttal documentation. The denials are basically "after review of all information" the Service has decided it knows what is best (4 d&f). If this is what the end of a valid reclassification effort can be expected to produce, the Endangered Species Act or people administering it should be changed. We refer also to the efforts of ESSA to administer the Convention and make determinations regarding bobcats, otter, lynx and ginseng (7,8,9, 10,13,21).
4. Species which are under no conceivable threat as viewed by the public working with them and states with management prerogatives over them, can be illegitimately listed via a process tailored to academicians and special interest groups with a strong commitment to the protectionist philosophy, i.e. Greater prairie chicken, bald eagle, San Jauquin kit fox, Mexican duck, grizzly bear, wolf, bobcat, etc. (11,13).

\* Numbers in parenthesis refer to references at the end of this testimony.

Congressman Robert L. Leggett  
June 15, 1978  
Page three

5. Reclassification of a species requires extensive state or federal monies and efforts to accomplish if they can somehow maneuver around all of the vociferous interest groups. There is no practical method for the public to participate in this process. Attempts to write rules for "public input" have done nothing to encourage that (5). Hearings are set with little or no time for "public" preparation, and are set in Washington, D. C. where the "public" can little afford to go for testimony (39). Public input, when it is generated, is often disregarded by the Endangered Species Office and the ESSA when it comes in. Or it does not fulfill the "data requirements" of the Agencies (the ESSA and ESO) (6,7,10,23). These Agencies apparently accept the input that parallels their original proposals and disregards the input of others, i.e. Working Groups Recommendations and ESSA, and many others (2-4,7,9,11,13,14,17,21,22,23).
6. Fur Takers of America are concerned at what appears to be a growing power of special interest groups like Defenders of Wildlife, Fund for Animals, Sierra Club and others with no direct economic or real interest in local resources, dictating through misuse of laws and treaties like the ESA of 1973, NEPA and the Convention, and manipulation of their administrators, the rules as to what people who have a direct economic and real interest can and cannot do. It appears to us that the Minnesota people should determine the management limits of the timber wolf, not the Wolf Society, Sierra Club or Defenders of Wildlife applying political pressure to the U.S. Fish and Wildlife Service. In the case of the wolf, it appears the Endangered Species Office took a straw vote and determined they were right all along in maintaining what amounts to the status quo (15). See reference 21 & 13 also.
7. In summary, the Fur Takers of America request that the Congress amend the Endangered Species Act and direct the Executive Branch to seek amendments to the Convention, which would remove the listing and delisting impediments which allow for such illegitimate listings as the bobcat, river otter, American ginseng, alligator, timber wolf, grizzly bear, and others. That Congress give back to the states the authorization to manage resident species as they see fit, and not be subject to the Act or Convention on what they judge to be manageable species. Wolf in Minnesota, Alligator in Louisiana, Bald Eagle in Colorado, Grizzly Bear in Montana, Bobcat over the entire U.S.A. are examples. We would also appreciate modification of regulations whereby species in question taken from these states can be moved, legally traded, nationally and internationally, possessed by individuals without federally dictated encumbrances when taken in accordance with state laws.

Fur Takers of America are concerned with the negative presumptions implied in the Endangered Species Act and subsequent rules, and written formally into the Convention (16)(18-20).

It is our view that negative presumptions in this law and treaty violate 5,000 years of traditional legal process. This creates a burden of proof, not on the accuser but on the accused. We feel this is not only unjust, but has resulted

Congressman Robert L. Leggett  
June 5, 1978  
Page four

in a great deal of unnecessary confusion, bitterness and economic hardship on our people, i.e. ESSA rulings on bobcat, river otter, Canadian lynx and American ginseng export ban and subsequent rules (7,8,10,16,17,21,22,23). This negative presumption is then combined with excessive requirements for "data" to prove that a positive finding is indeed fact. Listings of questionable legitimacy to begin with, can be maintained indefinitely by these maneuvers of semantics (11,12). A point can never be reached when "sufficient data" can be collected to satisfy the administrators who espouse an anti-management philosophy to begin with, i.e. ESSA and bobcat, river otter, lynx and American ginseng (2-4,6,7,8,9,10,13 & 21).

Fur Takers of America would therefore request that Congress direct by law, the Executive Branch to work toward deletion of negative presumptions from the Convention and amend the Endangered Species Act and subsequent rules to delete such inferences. Further that these negative presumptions be replaced with reasonable and specific language stating what is required for legitimate listing and allowing for a process of at least two years which includes a direct communication with all levels of interest of the public for a species to be listed.

Federal Register notices are not adequate notice for the public, nor are communications to Game and Fish Agencies. The input of State Game and Fish Agencies should be given more weight in determining whether or not a species is legitimately listed but this should not be the exclusive input. Further, that the individual states be given the authority to delist species from the Endangered Species Act lists in their states independent of the federal government and that modifications to the Convention allow for similar delistings.

Further, that no listings of broad taxa be allowed, all listings should be required on an individual species basis. Fur Takers are concerned with the "look alike" clause and request it be dropped completely since modern science has the methods and tools of determining for law enforcement purposes what it requires to make species determinations. We feel it is too broad an authority to give agencies like ESO or the ESSA which have expressed such questionable judgement. We further are alarmed at the use of this as an excuse for applying negative enforcement rules to increase the efficiency of enforcement, river otter as look alike as proposed in (10). We feel that law enforcement for law enforcements sake is not what the country is all about. We are being asked to bite the bullet excessively to make law enforcement more efficient. We feel that is a police state philosophy and should be corrected (10,24).

Further, that the concept of subspecies listings needs to be clarified. This presently gives people of the protectionist philosophy, the ability under law to define a new and unique subspecies on very questionable criteria. They can use this virtually to shut down any public works projects, wildlife harvest, timber and range resource management program now in effect, i.e. Snail Darter vs. Tellico Dam (26). Combined with the "look alike" authority it leaves open wide discretion for mischief by both ESO and the ESSA and their supporters.

Congressman Robert L. Leggett  
June 15, 1978  
Page five

Fur Takers of America are very much concerned with what we perceive as a punitive and negative attitude about the activities we pursue from the U.S. Fish and Wildlife Service's Endangered Species Office, Management Authority, Endangered Species Scientific Authority and Wildlife Permit Office. We feel that the language emanating from these agencies has been unnecessarily accusatory and negative. Input from individuals, fur harvest organizations, and state agencies has been disregarded, misinterpreted or depreciated (2-4,7-9, 11,13,14,17,21,22). Rules and requirements implementing the Endangered Species Act and the Convention have been unnecessarily ambiguous, restrictive and punitive (8,13,21,24,25).

Therefore, Fur Takers of America respectfully request that Congress modify the ESA of 1973, Section 9(d) to require import and export permits only when dealing with species legitimately listed on the ESA or Convention and not to include "all fish and wildlife" (18,21,24,25). That trade in species not listed, be allowed unencumbered by license or paperwork requirements which are in addition to requirements already in effect under the Department of Commerce regulations.

Further, that regulations emanating from the U.S. Fish and Wildlife Service offices as listed previously be in the future written to delete any negative references, subtle or direct, to what amounts to a personal opinion by several bureaucrats, of people with a conservation philosophy (fur takers, hunters and wild root collectors). We are tired of being accused of "over exploitation" when no scientific data has been presented to indicate evidence of that. Their entire approach is that wildlife users are at the base of this problem, when no one has determined that, in fact evidence indicates the opposite with animals listed from the U.S.A. Reference (17), page 10463 states, that the major reason for most species being threatened is habitat destruction. It then proceeds to establish the U.S. Fish and Wildlife Service's theory that international trade is also a "significant contributing factor". If the U.S. Fish and Wildlife Service and ESSA admit to such a lack of trade, export and import data as is indicated by pleas, for special efforts to find it by others, see references (8,10,21), upon what "data" do they support the conclusion that international trade is a "significant contributing factor"? It is apparent to the Fur Takers of America that an accusatory finger has been pointed at fur takers and others by people in the U.S. Fish and Wildlife Service and the ESSA and that they are continuing to throw their weight behind that without concrete data to back it up. The reasons for the plight of endangered species in the world today is overwhelmingly the result of habitat changes and modification by the increasing human population, misuse of our lands, and waters in producing food, energy and manufactured products for people. We do not enjoy nor do we accept being identified by people in the Executive Branch as the scapegoat in this global problem. This negativism is particularly evident in publications emanating from ESO and ESSA and articles written by several of their administrators or members in publications like Frontier (27).

Fur Takers of America are concerned that there is a distinct lack of positive wording and incentives in the ESA of 1973, International Convention and subsequent rules. The only rewards offered anyone in either of these documents is a bounty for turning a neighbor in for prosecution who violates these acts or regulations. These laws and treaties have legislated out, acts by the public on behalf of these species which would offer them some positive incentives to

Congressman Robert L. Leggett  
June 15, 1978  
Page six

comply with or enthusiastically support this law and Convention. For example, a fur taker who finds a road killed black-footed ferret cannot legally pick it up and freeze it until he can subsequently deliver it to authorities. He faces the full extent of the law if he even "harasses" it. Only federal officials and properly authorized state officials can touch a species so classified. A state official is required to undergo a bunch of red tape to become eligible. Enforcement regulations of the ESA as articulated in reference (28) raise some interesting questions and contradictions in regard to public participation.

Page 3 of ESTB, October 1977, Vol. 11, No. 10, (28) lists "prohibited acts" of ESA of 1973 which exclude everything but smelling from a distance and looking at a listed species, or killing one if it is attacking a person. Only federal or state authorized agents can do anything with them. There is no provisions for a private person to touch a listed species for any reason.

Page 10 of ESTB, November 1977, Vol. 11, No. 11, (29) remarks that wildlife biologists attribute the reduction of black-footed ferret sightings to concern by ranchers that a report of ferret presence would mean stopping of prairie dog control measures. If the ranchers depend on federal or state assistance for prairie dog control measures, their concern is justified, it would stop. If they report a ferret on federal or state land which they lease it gets even more complicated (31-33). EIS - Buffalo Gap National Grasslands. The article continues to state that private citizens are not reporting road kills which they did frequently prior to the 1969 Endangered Species Act because of unwarranted fears that they might be prosecuted. As a state employed wildlife professional, I have been specifically denied the authority to pick up road killed endangered species by the State Wildlife Agency under threat of prosecution. A private citizen is somehow to feel differently? How does this jive with the "prohibited acts" of references (28 and 30).

Page 5 of ESTB, December, Vol. 11, No. 12, (30) states that "civil penalties" may range up to \$10,000 per violation in cases where it is proven that the violator's action was taken "knowingly" against the law. For people who violate the law unwittingly, such as tourists bringing in an animal as a pet (or anyone else?), unaware that it has been listed as an Endangered Species, the penalty ranges (only) up to \$1,000. Whatever happened to the concept of culpability under the law? Harsher penalties for "willful" intent of up to \$20,000 and jail of up to 2 years can be levied. So we have encouraged a great deal of public participation with very positive incentives with the enforcement of this Act. Ranchers are aware of what the enforcement of this Act offers them.

There have been instances where the enforcement of the ESA as well as the Lacey Act and Bird Treaties have often been in the recent tradition of the Bureau of Alcohol, Tobacco and Firearms. Overzealous and unreasonable enforcement does little to improve the public support and enthusiasm of these efforts. It in fact does just the opposite. A just law carries punishment that is in proportion to the offense. Under the present system a rancher in Minnesota could be fined \$20,000 and get two years in jail for shooting a wolf caught in the act of killing a prized and expensive bull (30). This in full light of the fact

Congressman Robert L. Leggett  
June 15, 1978  
Page seven

that the State of Minnesota considers the timber wolf as illegitimately listed as an Endangered or Threatened species and has pleaded for reclassification which would allow state management authority. These pleas went unheeded (2-4). In our opinion the ESA as presently written and enforced is not a just law.

A person suffering economic losses from depredations of these animals has no "right of self protection" (4b) so must wait for a federally authorized person who often does not come until too late or can give no effective assistance when they get there (2-4,34). No relief or payments are made for these depredations unless an expensive civil court suit is pursued (35). This situation is regrettable for it gives a small livestock producer with a serious problem no legal alternative but to violate the ESA, Bald Eagle Act and others. This does not contribute to a respect for law and authority. It does not increase the positive efforts of agencies working to reestablish extirpated species (2-4). One of the reasons listed by the ESO in limiting the reclassification of the wolf was, that the wolf has not yet reinvaded the entire state of Minnesota (4d). Unless some effort is made to increase the positive support for wolf population expansion there will be no chance for that. The dilemmas and problems will increase. Losses of cattle and other stock will increase with the increasing range of the wolf. Who will pay for it? Is ESO's goal to put wolves back into all of the states to carrying capacity? What will it take to get the timber wolf off the Endangered Species list? What will it take to get it back to Minnesota Department of Natural Resources for furbearer management, where it should have always been?

A fur taker in Minnesota who depends on his activities of fur harvest for a part of his living, watches while wolves reinvade his area and reduce populations of smaller carnivores by its competitive abilities. His income goes down, wildlife abundance goes down and he is unable to harvest the lesser populations of the succeeding wolf. Wolves can only be taken by federal trappers, a monopoly on an obviously safe resource. If the population estimates of 1,000-1,200 wolves in Minnesota are accurate then a harvestable surplus of at least 300 wolves should be available each year and still allow for an expanding population (2a,3a,3b,3c3). Why is no sport hunting or fur taking being allowed? The reasoning of the ESO is not legitimate nor is it consistent with accepted wildlife management principles. We feel that it reflects the philosophy of the protectionist pressure groups represented in the Endangered Species Office.

The livestock producer and farmer controls a great deal of the habitat upon which many endangered species depend. What does the Convention or ESA of 1973 offer him in a positive sense? What does it offer him in the negative sense? In the positive sense, these laws offer him nothing but restrictions on his hunting, trapping and livestock protection activities. They offer him nothing positive but nebulous aesthetics of somewhat questionable value which he may or may not appreciate. If he depends on state or federal leased lands they are a direct negative threat to him. Black-footed ferret management via the 1972 Executive ban on toxicant use for prairie dog control is a good example.



Congressman Robert L. Leggett  
June 5, 1978  
Page eight

Prairie dogs have forced people out of their livelihoods and are continuing to do so (31,33). If ferrets are discovered on public lands it means instant state and federal people and private interest groups muddling into what ranchers consider their affairs. Many agricultural people perceive the ESA as federally mandating rights of wildlife over theirs (33). It is not practical to expect them to accept that. Their feelings and the impacts on them as a result of this is well articulated in the EIS of the USFS Buffalo National Gap - Prairie Dog Management Proposals and comments. The bobcat export ban by ESSA directly reduced many ranchers incomes by arbitrarily disrupting the market on bobcats, the resulting tagging system set up a double layered market which many of them were unable to use. This occurred in a year of poor agriculture prices and drought (36). This resulted in frustrating bitterness and continues yet with no sign of relief.

Fur Takers of America would therefore request that the Congress amend the Endangered Species Act to modify the negative language and incentives in Section 9 and limit them only to species legitimately listed under new and more valid rules. That the Executive Branch be required to get the bobcat, lynx, river otter and ginseng removed from the Convention at the next opportunity and suspend enforcement of the Convention on these species until that is accomplished. We feel there should be a softening of the language which would allow for import and export under certain conditions by both private individuals and public agencies with reduced red tape, allow for taking of furbearer or bird species by an individual or agency in protection of his personal property, allow for taking and possession by individuals of listed species under certain conditions, i.e. taken in depredations complaints, accidental or natural death and found dead on private property, or determined by the state wildlife agency not to be endangered within that state. We feel that funds should be provided for payment of losses caused by depredations of these species. Incentive programs for people who undertake management practices on private or public lands which will enhance the production of an endangered species should be provided as direct grants.

Fur Takers of America are concerned with language in the ESA of 1973 that allows for petitions for classification of species common in other areas but "endangered" in a marginal area of range. This is a Pandora's box we would hope would be deleted. It can be used as a tool to stop legitimate timber, mineral and wildlife management on public and private lands and subjects user groups to all the red tape requirements of the ESA of 1973 and Convention. It also allows for stopping of needed public works (37).

Fur Takers of America are concerned about the propriety of the Executive Branch of government employing in positions of authority, persons with a strong past relationship and affiliations with agencies and organizations which have officially stated opposition to the interests of the resource users. Members of ESSA and administrators in the ESO have had long associations with Defenders of Wildlife both as members and employees. Defenders of Wildlife staff photos are used in the Endangered Species Technical Bulletin. Several ESSA members, employees and administrators

Congressman Robert L. Leggett  
June 15, 1978  
Page nine

in the ESO have articulated their protectionist views publicly and have publicly stated their contempt of trappers and other fur takers. The Defenders of Wildlife is overtly trying to effect legislation to get the leghold trap outlawed which is an indispensable tool in our wildlife management activities (38). They also have petitioned the U.S. Fish and Wildlife Service to have the bobcat listed as endangered or threatened in spite of overwhelming evidence that it is not legitimately in need of such protection. ESSA allowed 76,060 export permits for bobcats last year. There are serious questions about the legitimacy of Defenders of Wildlife's efforts. They have basically pursued a negative attack on established wildlife management throughout their existence and continue to do so as a tax exempt "humanitarian" group. Their influence on the ESSA and ESO is of long standing and is well documented.

The Fur Takers of America respectfully request that Congress investigate the influence of the Defenders of Wildlife, Fund for Animals and other protectionist interest groups on offices within the Fish and Wildlife Service and ESSA. We feel this influence is being passed down via the Endangered Species Act and Convention to the American public in unnecessarily punitive rules and regulations which support their anti-management philosophy. We seek impartial, knowledgeable wildlife professionals as administrators, not protectionist zealots seeking to vent their eyre on us who they view as the problem and have selected as their scapegoat. We find no legitimately qualified professional wildlife management scientists on the ESSA board or staff. Why not? Zoology, botany and law academicians, we do not feel are adequate to conduct the affairs of the ESSA. Their lack of ability is well articulated in references (6-11,13,21). We feel that our only hope for relief is a direct effort by our congressmen and senators via the legislative and budgetary processes. We would very much appreciate your assistance with this serious burden. A continued punitive and negative approach by the ESSA and U.S. Fish and Wildlife Service towards people who have a strong self interest in these wildlife issues, in our view, will be counter productive for all, including the wildlife we all treasure.

We appreciate the opportunity to comment and thank you.

Respectfully,

*Major L. Boddicker*

Major L. Boddicker  
Western Region Representative  
Conservation Committee  
Fur Takers of America

MLB:deb

Enclosures

[From the Sunday Times, May 1978]

## ONE SMALL VICTORY

(By John Cathcart)

Never did so huge a Goliath face so small a David. On one side a 116 million dollar dam and the might of the United States Government. On the other side the snail darter—all three inches of it. And at the moment the Tiny Tennessee fish—proper name *Percina (Imostoma) Tandsi*—is winning.

The snail darter's only known breeding ground is 17 miles of gravel shallows on the Little Tennessee River. Just downstream, in the shadow of the Great Smoky Mountains south of Knoxville, stands the bright new bulk of the Tennessee Valley Authority's Tellico dam. And there's the confrontation: to close the dam would be to swamp and destroy the fish's home. The issue put before the sixth U.S. Circuit Court of Appeals early last year was simple: either the dam stays open and remains useless or the darter dies. The court ruled that the snail darter was protected by the Endangered Species Act and was entitled to a permanent injunction to protect it. The dam had to stay open.

But the fight continues and the Government is now appealing to the Supreme Court while the fish's allies are preparing to beat off the challenge.

The snail darter's recorded history is short. It was first discovered by a university ichthyologist in 1973; and two years later it became clear that its only home was this short stretch of threatened water in East Tennessee, where it spends most of its time flitting after the tiny snails which are its staple diet. Nineteen seventy-three was also the year the Endangered Species Act banned all Federal departments and agencies from carrying out projects which would "destroy or modify" the habitat of any species officially listed as endangered.

What seemed unfair to the Tennessee Valley Authority and to the Government was that the Tellico dam project had been begun in 1967, six years before the snail darter had even been heard of.

The principal thorn in the government's side is Hiram "Hank" Hill, now aged 28, who in 1974 was seeking a subject for his Environmental Law class at the University of Tennessee. He chose the snail darter, rallied support among conservationists, biologists and lawyers, and took the authorities to court.

Hill contends that there is a wider issue at stake than just a fish. "Closing the dam and creating the reservoir," he says, "would be a fundamental violation of the law by the Federal Government. And when the Government flagrantly violates its own laws there has to be something wrong somewhere."

The Tennessee Valley Authority has sent divers to investigate the darter's habits; has searched other rivers in the vain hope of finding another breeding colony; and has even tried transporting snail darters to another river. In the meantime, guards patrol the Tellico project area to keep out intruders, and the fish swims on.

If the darter wins its case at the Supreme Court, one wonders what the Tennessee Valley Authority will do with its huge pile of concrete. It could, the humorists suggest, become the largest drive-in cinema in the world.

[Whereupon, at 12 noon, the subcommittee adjourned.]

